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AN ANALYSIS OF NAVY CONSTRUCTION CONTRACT CHANGE ORDER AUDITS

Deane Edward Leidholt

NAVAL POSTGRADUATE SCHOOL
Monterey, California

THESIS

AN ANALYSIS OF NAVY CONSTRUCTION
CONTRACT CHANGE ORDER AUDITS

by

Deane Edward Leidholt

December 1977

Thesis Advisor: J. W. Creighton

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An Analysis of Navy Construction Contract Change Order Audits

by

Deane Edward Leidholt
Lieutenant, Civil Engineer Corps, United States Navy
B. Arch., Montana State University, 1970

Submitted in partial fulfillment of the
requirements for the degree of

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Paragraph 3-801 of the Armed Service Procurement Regulation requires that an advisory audit be performed for all one source negotiated procurement actions exceeding $100,000. This study examines the current usability of these advisory audits in the negotiation of Navy construction contract change orders. A survey was conducted to determine how audits are currently used and to solicit suggestions on how current procedures might be improved. Analysis of the response identified five recommendations for consideration by policy-making managers in the Navy construction contract administration organization. These five recommendations are (1) to recognize different group backgrounds and experience levels in the formulation of audit guidance, (2) to prepare a comprehensive informational reference, (3) to implement audit training and education, (4) to increase contractor awareness of informational responsibilities, and (5) to require direct communication between contract administrators and auditors.

TABLE OF CONTENTS

I. INTRODUCTION ---------------------------------- 11

A. PROBLEM DESCRIPTION ---------------------- 11

B. THESIS OBJECTIVES ------------------------ 12

C. SCOPE OF THE STUDY ----------------------- 13

D. ASSUMPTIONS AND LIMITATIONS -------------- 14

II. ANALYSIS OF THE PROBLEM ---------------------- 17

A. THE RESEARCH QUESTION -------------------- 17

B. RESEARCH METHODOLOGY --------------------- 18

1. Literature Search -------------------- 18

2. The CCCO Survey Questionnaire -------- 19

a. Purpose ---------------------------- 20

b. Design ----------------------------- 20

c. Distribution ----------------------- 22

3. The Personal Interview --------------- 23

C. ANALYSIS METHODOLOGY --------------------- 24

III. SURVEY RESULTS AND ANALYSIS ------------------ 26

A. SURVEY RESPONSE -------------------------- 26

B. POPULATION CHARACTERISTICS --------------- 29

1. Background --------------------------- 29

a. EFD/OICC Engineers (EFDE) -------- 30

b. ROICC-AROICC's (AROICC) ---------- 33

c. ROICC Supervisory Civil Engineers (RSCE) ------------------ 36

2. Experience Levels with CCCO Audits --- 39

C. PUBLISHED GUIDANCE ----------------------- 42

1. Most Specific Guidance ----------------- 43
2. Administrative Procedures -------------- 44
3. Informational References --------------- 45
D. PERSONAL CONSULTATION GUIDANCE ------------- 46
1. CCCO Audit "Expert" -------------------- 47
2. CCCO Audit Action Designee ------------- 49
E. AUDIT RESULTS AND TIMELINESS --------------- 52
1. CCCO Audit Results --------------------- 53
2. CCCO Audit Timeliness ------------------ 57
F. PROPOSAL BREAKDOWN AND OVERHEAD EVALUATION - 61
1. Receipt of Breakdowns ------------------ 62
2. Proposal Evaluation Difficulty --------- 64
3. Overhead Evaluation -------------------- 65
G. INTERRELATIONSHIP WITH DCAA ---------------- 67
1. Mutual Knowledge ----------------------- 69
2. Levels of Communication ---------------- 70
3. Contract Administration/Contract Audit Interface Problem ---------------- 73
IV. CONCLUSIONS ------------------------------------ 75
A. BACKGROUND AND EXPERIENCE LEVELS ----------- 75
B. PUBLISHED GUIDANCE ------------------------- 76
C. PERSONAL CONSULTATION GUIDANCE ------------- 78
D. AUDIT RESULTS AND TIMELINESS --------------- 79
E. PROPOSAL BREAKDOWN AND OVERHEAD EVALUATION - 80
F. INTERRELATIONSHIP WITH DCAA ---------------- 81
V. RECOMMENDATIONS -------------------------------- 82
A. BACKGROUND AND EXPERIENCE LEVEL DIFFERENCES ---------------------------------- 82

B. THE PREPARATION OF A COMPREHENSIVE INFORMATIONAL REFERENCE ---------------------- 83

C. THE IMPLEMENTATION OF AUDIT TRAINING AND EDUCATION ---------------------------------- 84

D. INCREASE CONTRACTOR AWARENESS OF INFORMATION RESPONSIBILITIES ---------------- 86

E. REQUIRE DIRECT COMMUNICATION WITH DCAA AUDITORS -------------------------------- 87

APPENDIX A: ACRONYMS AND DEFINITIONS ----------------- 89

APPENDIX B: CCCO AUDIT QUESTIONNAIRE ----------------- 94

APPENDIX C: TABULATION OF CCCO AUDIT QUESTIONNAIRE RESPONSE --------------------------------- 101

APPENDIX D: DEFENSE CONSTRUCTION CONTRACTING POLICY -- 116

APPENDIX E: PUBLIC LAW 87-653, THE TRUTH IN NEGOTIATIONS ACT ------------------------ 119

APPENDIX F: THE NAVY CONSTRUCTION CONTRACT ADMINISTRATION ORGANIZATION -------------- 123

APPENDIX G: THE DEFENSE CONTRACT AUDIT AGENCY -------- 133

BIBLIOGRAPHY -- 138

INITIAL DISTRIBUTION LIST ----------------------------- 142

LIST OF TABLES

Table Page

1. Population Response ---------------------- 27

2. Survey Responses With CCCO Experience ----- 28

3. Experienced Response as a Percentage of Experienced Population ---------------- 28

4. EFDE Response by GS-Grade ---------------- 31

5. EFDE Position Length and Government Contract Experience (Months) ------------- 31

6. EFDE Accounting, Accounting Systems and Auditing Knowledge ------------------ 32

7. Office Positions of ROICC's and AROICC's -- 33

8. ROICC-AROICC Response by Military Rank ---- 34

9. ROICC-AROICC Position Length and Government Contract Experience (Months) --- 34

10. ROICC-AROICC Accounting, Accounting Systems and Auditing Knowledge ------------ 35

11. RSCE Response by GS-Grade ---------------- 37

12. RSCE Position Length and Government Contract Experience (Months) ------------- 37

13. RSCE Accounting, Accounting Systems and Auditing Knowledge ------------------ 38

14. CCCO Audits Experienced Per Year ---------- 41

15. Percentage Comparison of Group Answers on Question 3. --------------------------- 43

16. Percentage Comparison of Group Answers on Question 20. -------------------------- 47

17. Percentage Comparison of Group Response on Question 22. -------------------------- 49

18. Response to Question 22 A. ---------------- 49

Table Page

19. ROICC Office Percentage Comparison of Response to Question 24. ------------------ 50

20. Percentage Comparison of Group Response on Question 23. ------------------ 51

21. EFD/OICC vs. ROICC Office Response to Question 7. ---------------------------- 54

22. EFD/OICC vs. ROICC Office Response to Question 10. --------------------------- 55

23. EFD/OICC vs. ROICC Office Response to Question 12. --------------------------- 57

24. Weeks to Receive Audits ------------------ 57

25. Weeks to Schedule Negotiations ----------- 58

26. EFD/OICC vs. ROICC Office Response to Question 11. --------------------------- 60

27. Cost Area Evaluation Difficulty ---------- 64

28. Percentage Comparison of Group Response to Question 15. --------------------------- 66

29. Percentage Comparison of Group Response to Question 22. --------------------------- 69

30. Percentage Comparison of Group Response to Question 29. --------------------------- 70

31. Percentage Comparison of Group Response to Question 25. --------------------------- 71

32. Percentage Comparison of Group Response to Question 26. --------------------------- 73

33. Group Comparison of Background Characteristics and CCCO Audit Experience Levels ----------------------------------- 77

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I. INTRODUCTION

A. PROBLEM DESCRIPTION

Paragraph 3-801 of the Armed Services Procurement Regulation (ASPR) requires that advisory audits be performed for any one source negotiated procurement action exceeding $100,000. Although the majority of Navy construction contracts are advertised procurements, most contract modifications or change orders are not. Construction contract change orders (CCCO) are usually negotiated primarily because of the price advantages the on-site contractor offers to the Government. When the contractor's change order proposal exceeds $100,000, an advisory audit performed by the Defense Contract Audit Agency (DCAA) is required. These advisory audits are intended to assist contract administrators in evaluating and negotiating the contractor's proposal. However, advisory audits frequently confuse contract administrators and complicate the evaluation of the very proposal meant to be simplified. This confusion produces various results. CCCO negotiations are often lengthened, placing a strain on Government-contractor relationships. The final negotiated price to the Government may be adversely affected. The most detrimental results may be the adverse effects on the operations of the field contract administration offices. These Resident Officer in Charge of Construction (ROICC) offices are tasked with performing all aspects

of construction monitoring and contract administration for various facilities in their jurisdiction. To accomplish this, a minimum amount of scarce resources, particularly supervisory personnel, are dedicated to these offices. If the advisory audits as performed do not provide easily usable results, ROICC supervisory personnel must devote scarce time to make them usable. Hence, ROICC's, AROICC's, ROICC Supervisory Civil Engineers (RSCE's) or EFD/OICC engineers (EFDE's) are faced with several choices. They can provide additional feedback to the auditor and request that the audit results be modified. They can proceed with the current audit report and justify deviations separately in the CCCO documentation. Or, they can disregard the audit report completely and justify all deviations through documentation based on the precedence of their knowledge of contract requirements and conditions. It is evident that none of these alternatives is as efficient or effective as obtaining easily usable audit results initially.

B. THESIS OBJECTIVES

The two primary objectives of this thesis are:

(1) Identify those actions NAVFAC contract administrators may take at the beginning of the CCCO audit process that would result in more usable audit information.

(2) Communicate the specifics of these actions to those in policy-making positions in the NAVFAC contract administration organization.

To identify those actions sought in the first objective, relevant data was sought. Literature search and personal interviews indicated that no such data was presently available. The need to generate the required data through the NAVFAC organization became evident. Because the most experience in handling CCCO audits appeared to exist in field contract administration personnel, a survey questionnaire was chosen as the vehicle to collect the needed data. This survey questionnaire had two intentions in mind: (1) find out how the present obtainment and use of CCCO audits are viewed by field contract administration personnel, and, (2) solicit suggestions on how current CCCO audit procedures might be improved.

From an analysis of the data base generated by the survey questionnaire, the satisfaction of the second objective was made possible.

C. SCOPE OF THE STUDY

The responsibilities and duties of NAVFAC construction contract administration personnel are many and varied. This study focuses on DCAA audit investigations of construction contract change orders. Other DCAA audits are performed for NAVFAC both for negotiated construction contracts and negotiated A/E contracts exceeding $100,000. This study is not concerned with these types of audits, although some of the research and findings presented herein may be applicable to them.

The research and survey questionnaire used in this study has been directed primarily to field engineering personnel. These are the EFD construction division and ROICC office administrators who are familiar with day to day construction activities and contract administration responsibilities. This was done to present the views of those who have had experience with the subject matter in a field situation. The survey results might then be described as representing the Construction Division-(05) viewpoint with the EFD/OICC's Acquisition Department. It is envisioned that additional input from the Contracts Division-(02) would be solicited by a decision-maker considering the implications of these results.

D. ASSUMPTIONS AND LIMITATIONS

The principle assumption made in this study is that all EFD/OICC's are guided by the Contracting Manual, NAVFAC P-68, therefore, they operate in the same manner with respect to CCCO audits and in compliance with P. L. 87-653. This assumption allows the survey data to be accumulated and addressed on a single population basis with three stratifications. Review of EFD/OICC change order instructions verifies this assumption in general, although different administrative procedures and management philosophies are present in some areas. When the differences in these procedures is significant enough to cause distortion

of survey results, they will be identified in the results discussion.

The use of a single figure to discuss survey results will indicate an agreement among the three stratifications of the population. In the event that agreement does not exist between the EFD engineers (EFDE's), the ROICC-AROICC's (AROICC) or the ROICC Supervisory Civil Engineers (RSCE), this difference will be brought out. It should be noted that results may be addressed on a single basis (all stratifications agree), a dichotomous basis (EFD/OICC's versus ROICC offices) or a tertiary basis (EFDE versus AROICC versus RSCE).

It has been assumed that readers of this thesis command a general knowledge and familiarity with NAVFAC construction contracting and CCCO audits. To accommodate those who do not possess this knowledge, the appendices includes discussion of several background areas. Appendix A contains a list of acronymns and definitions of terms frequently used. Appendix D contains background information on defense construction contracting policy. Appendix E gives a short synopsis of Public Law 87-653. Appendix F explains the Navy construction contract organization while Appendix G provides information on the Defense Contract Administration Agency (DCAA).

The use of data obtained from a survey questionnaire as the major input for a study involves several inherent limitations. Initially, the preparation and form of the

questionnaire is subject to the author's judgment, bias and the limitations of semantics. The use of the questionanire as the primary medium does not allow for two-way communication during its completion by participants. Survey results tabulation is also susceptible to similar type problems. The researcher's bias could be a factor in the interpretation and tabulation of response. The subjective judgment required in the evaluation of answers to free form questions is one example. Once compiled, the results stand the chance of misinterpretation. One must guard against making causal connections where associations or relationships are merely indicated. In spite of these limitations, a survey questionnaire offers a relatively economical, efficient and accurate means of gathering data from a large number of participants. Accordingly, the survey results in this study should be evaluated with both the method's advantages and limitations in mind.

Although an attempt has been made to be as comprehensive as possible, space and deadline considerations must be considered. It has not been possible to state and analyze each and every recommendation or suggestion advanced by interested parties. Rather, the main focus has been directed to CCCO audits in NAVFAC in a macro sense.

II. ANALYSIS OF THE PROBLEM

To facilitate analysis of the CCCO audit problem, the first thesis objective as stated on page 12 was translated into a basic research question. This question forms the framework for the gathering of research data to be used in the analysis performed and discussed in Chapter III.

A. THE RESEARCH QUESTION

The basic research question addressed in this thesis is: "what is the current state of construction contract change order audits in the Navy construction contract administration world, and what should it be"? In attempting to determine the characteristics of this existing state, the more general research question was broken down into the following six sub-areas of investigation:

1. What is the audit experience level and accounting background level of NAVFAC contract administration personnel who may handle CCCO audits?
2. What is the adequacy of both published directional guidance and informational references in the CCCO audit area?
3. Who is presently seen as the organization's "expert" to whom consultation requests can be directed, and who should be?

4. What is the current opinion of both the results and timeliness of audit reports now received?
5. What areas of the contractors proposal are seen as the most difficult to evaluate? Does the evaluation of the contractor's overhead proposal present any significant problems for field contract administration personnel?
6. What is the extent of the current interface with DCAA auditors during a change order audit? How knowledgeable are the auditors with respect to construction contracts and contractors and does a contract administration/contract audit interface problem exist?

The gathering and analysis of information from these six sub-areas was then used jointly as an indication of the overall existing state of CCCO audits.

B. RESEARCH METHODOLOGY

Three different types of research have been utilized in gathering information for analysis of CCCO audits in this study: literature search, survey questionnaire, and personal interview.

1. Literature Search

A detailed literature search was made of both Government and private sector reference information in the subject areas of construction contracts, construction contract change orders, audits of change orders, and

P.L. 87-653, The Truth in Negotiations Act. The search for government references and information centered in procurement under ASPR, although some investigation was made of federal construction procurement under the Federal Procurement Regulations (FPR). Computer based research was made of the data banks at the Defense Documentation Center (DDC) as well as the Defense Logistics Studies Information Exchange (DLSIE) to locate available reference material or studies in this area. All NAVFAC and CECOS contract administration guidance and publications were investigated along with all the EFD/OICC level command instructions concerning change orders and CCCO audits. In the private sector, the materials of two companies, Procurement Associates Inc. of Covina, California, and Federal Publications Inc. of Washington D.C., provided the majority of private industry reference material used. The bibliography at the rear of this study contains the majority of reference materials available in the CCCO area.

2. The CCCO Survey Questionnaire

The major form of research used to gather data to answer the research question was a survey questionnaire distributed to both EFD/OICC and ROICC contract administration personnel. After review of references and information from the literature search, and personal interviews with various NAVFAC contract administration personnel, a list of pertinent questions in each of the six sub-areas of the

research question were prepared. These questions were then designed into a short answer mail response questionnaire.

a. Purpose

The main purpose of the questionnaire was to gather short, factual replies concerning the opinion of contract administrators concerning current CCCO audit affairs. These replies were intended to provide fact finding, descriptive and enumerative type information. It is important to point out that the survey was not designed to show causal connections, but rather to indicate associations or correlations in a general sense.

b. Design

The most important consideration which influenced drafting of the CCCO audit questionnaire was the question of bias. Because the questionnaire was planned to gather a combination of both short factual and opinion type responses, the way in which questions were posed was seen as a major consideration. To present questionnaire inquiries objectively, several different structural features were incorporated. Although questions were generally presented in area groupings for some cognitive continuity, some intermixing and dispersing of questions was used to reduce influence from physical closeness to previously answered questions. Three different response types of questions were used, yes/no, multiple choice and fill in the blank, or free answer. The use of these forms of questions was varied throughout the survey. This use of different response

types was intended to incorporate the "open" and "closed" concepts of questioning.[1] The open or free-answer question is not followed by any kind of choice and gives complete freedom to the respondent. The closed question is one in which the respondent if offered a choice of alternative replies, such as true-false or multi-choice. In addition, both "funnel" and "filter" types of question sequences were used.[2] A "funnel" sequence starts off with a very broad question, then progressively narrows down the scope of the questions until it comes to some very specific points. A "filter" question precludes a respondent from a particular question sequence if those questions are irrelevant to him. The introductory explanation was kept as general as possible to avoid presenting any biased introductory statements. Because of the difficulty in measuring bias in the results, this combination of different structural elements was intended to reduce bias in the questionnaire formulation stage. The success of such a design effort, however, is very difficult to assess.

In summary, the questionnaire as shown in Appendix B was designed to impartially present a series of short, factual and attitudinal questions, intermixed to

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[1] Oppenheim, A.N., Questionnaire Design and Attitude Measurement, p. 40, Basic Books Inc., 1966.

[2] Ibid, p. 38.

some degree both by content and response form, providing the respondent with the choice of a level of personal involvement.

c. Distribution

Distribution of the survey questionnaires was aimed at those NAVFAC construction contract administration personnel who work with CCCO audits regularly. This population was identified as the construction division engineers (EFDE's) at the EFD/OICC's, the ROICC's or AROICC's, and the Supervisory Civil Engineers (RSCE) at the ROICC field offices. To avoid the differences sometimes encountered in overseas construction contract administration, only personnel from the seven continental United States EFD/OICC's were considered for distribution. Since this entire population was estimated at approximately 500 individuals, plans were made to distribute the survey questionnaires to all EFD/OICC construction division engineers, and to ROICC's, AROICC's and Supervisory Civil Engineers at major and medium sized ROICC offices as defined in the Civil Engineer Corps Zero Base Study.[3] The logic for this approach was the feeling that the majority of audits probably occur during larger MILCON construction projects. Such projects are usually administered at the large and medium-sized ROICC offices. This approach was planned to yield response from

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[3] Naval Facilities Engineering Command, Civil Engineer Corps Zero Base Study, sec. V.B., Spring 1974.

those with the most experience, and to reach both a majority of the entire population and a majority of the experienced population.

Mechanics of the actual distribution, then, approximated the theoretical approach outlined above. Each EFD/OICC was sent a number of questionnaires and requested to distribute them to its own EFD/OICC engineers and then the ROICC's, AROICC's, and RSCE's of its major and medium sized ROICC offices. In addition, EFD/OICC's were requested to distribute questionnaires to those individuals regularly concerned with CCCO audits who were not included in the three main categories above. Each EFD/OICC was then requested to furnish a list of the number of personnel assigned by group (EFDE's, AROICC's, RSCE's and others) who regularly handled CCCO audits with a summary of the number of questionnaires distributed to each group. With this information, the size of the population and percentage of response could be calculated. Therefore, if this level of response from the entire population should become significant, it would yield results which could be associated to the total population with a high level of certainty.

3. The Personal Interview

Conducted concurrently with both the literature search and the survey questionnaire was a series of interviews with persons knowledgable in various aspects of CCCO audits. The people interviewed were in various levels of the contract

administration organizations of NAVFAC, the U. S. Army Corps of Engineers (COE), and DCAA. The interviews were conducted in a free form manner. The primary purpose of pre-questionnaire interviews was that of problem and question seeking, while the purpose of post-questionnaire interviews was that of results discussion. While the results discussed later come primarily from the survey questionnaire, many of the questions included were products of interviews with various NAVFAC personnel. Interviews were conducted with both Army Corps of Engineers contract administrators and auditors and DCAA audit management personnel to obtain their personal views in the CCCO audit areas. At no time were either official COE or DCAA policy statements sought. A list of persons with whom CCCO audits were discussed is included in the bibliography.

C. ANALYSIS METHODOLOGY

Since the CCCO questionnaire was designed as a simple fact finding, descriptive and enumerative type survey the corresponding analysis methodology has been kept equally simple. Data derived from questions requiring nominal or ordinal type answers are usually tabulated for frequency of various replies. These results are then usually expressed as percentages of the total number of replies. Interval and ratio data is treated either in a simple enumerative manner as above or under the procedures of the normal distribution in parametric statistics. The normal distribution

is a continuous distribution fully determined by two parameters, its mean ($\overline{x}$) and standard deviation (s). Represented by the familiar bell-shaped curve, the normal distribution model was chosen for use in analyzing some survey results because the outcomes of various questions appear to be influenced by a large number of independent small factors for which this distribution is a close fit. The characteristics of a normal distribution hold that when a random variable is normally distributed, more than 68 percent is within one standard deviation, more than 95 percent is within two standard deviations and nearly everything is within three standard deviations.[4] Within the questionnaire, results such as the number of CCCO change orders handled per year and their amounts are subjected to this type calculation.

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[4] Boot, Joh, C.G., and Cox, Edwin, B., Statistical Analysis For Managerial Decisions, p. 167, 2nd ed., McGraw-Hill, 1974.

III. SURVEY RESULTS AND ANALYSIS

Chapter III presents an in-depth analysis and discussion of the survey response on a question by question basis. This analysis was performed from the raw data as received and tabulated in Appendix C. For cognitive continuity, the survey questions, analysis and discussion have been grouped into seven areas. The first grouping is a quantitative discussion of the survey response. The six following groups are the same as the six sub-areas of investigation from the research question as mentioned on page 17. In total, the contents of this chapter represent NAVFAC contract administrators attitudes and beliefs as to the current state of CCCO audits in Navy construction contract administration.

A. SURVEY RESPONSE

The level of actual response from the NAVFAC construction contract administration community to the CCCO audit questionnaire was quite high. By combining the distribution information received from the EFD/OICC's with the numbers of questionnaires received, the following table has been constructed:

TABLE 1.

POPULATION RESPONSE

	POPULATION	QUESTIONNAIRES DISTRIBUTED	QUESTIONNAIRES RECEIVED	RESPONSE AS A PERCENTAGE OF POPULATION
EFDE	60	49	36	60.0%
AROICC	156	124	100	64.1%
RSCE	98	69	64	65.3%
TOTAL	314	242	200	63.7%

Thus, of the 242 questionnaires distributed, 200 or 82.6% were returned representing 63.7% of the entire population. Investigating the response of the three stratification groups as a percentage of their population shows a 60.0% response from the EFDE's, a 64.1% response from the ROICC/AROICC's, and a 65.3% response from the RSCE's.

Population experience levels with CCCO audits were then determined from the first survey question:

1. Do you have any job experience with respect to construction contract change (CCCO) audits?

   YES _____ NO _____

Tabulation of this information yielded the following population stratification experience levels:

TABLE 2.

SURVEY RESPONSES WITH CCCO EXPERIENCE

	QUESTIONNAIRE RESPONSE	RESPONSES WITH EXPERIENCE	PERCENTAGES OF RESPONSES WITH EXPERIENCE
EFDE	36	31	86.1%
AROICC	100	48	48.0%
RSCE	64	34	53.1%
TOTAL	200	113	56.5%

It should be noted that the experience level of EFD/OICC engineers far exceeds that of either ROICC/AROICC's or ROICC Supervisory Civil Engineers. Taking a dichotomous viewpoint, the EFD/OICC construction division experience level is shown to be 86.1% as compared to the ROICC office (ROICC-AROICC, RSCE) experience level of 50.0%.

Next, to determine what percentage of the experienced population has responded, the group experience level percentages have been applied to the total population as a simple extension-type calculation.

TABLE 3.

EXPERIENCED RESPONSE AS A PERCENTAGE OF EXPERIENCED POPULATION

	EXTENSION	EXPERIENCED POPULATION	EXPERIENCED RESPONSE	EXPERIENCED RESPONSE/ EXPERIENCED POPULATION
EFDE	60 x .861=	52	31	59.6%
AROICC's	156 x .480=	75	48	74.0%
RSCE	98 x .531=	52	34	65.4%
TOTAL		179	113	63.1%

In summary, the survey results to follow in this chapter represent not only 60 percent plus of the total population but also approximately 60 percent of the experienced population. Characteristics of results representing such a high percentage of the population can be associated to the total population with a high level of certainty.

B. POPULATION CHARACTERISTICS — BACKGROUND AND EXPERIENCE LEVELS

1. Background

To determine the background characteristics of the population as a whole in addition to those of the stratification groups in particular, a series of ten background questions was asked at the end of the survey questionnaire. This series of questions was included as follows:

1. Which EFD or OICC does your office report to?
2. Which office do you work in?
   EFD or OICC Construction Division ____
   ROICC ____ OTHER ____ (Please specify)
3. Does your office routinely handle construction contracts of a size large enough to generate change orders ($100,000 +) which will require CCCO audits? YES ____ NO ____
4. What is your position? ______________________
5. How long have you held this position, in months? ______________________
6. What is your rank (Military or GS)? __________
7. How many months of construction contract experience do you have? GOVERNMENT __________
   CONTRACTOR ________________
8. Do you have any accounting background? YES ____
   NO ____. If yes, please specify.

9. Do you have any knowledge of construction contractor's accounting systems? YES ____ NO ____

   A. If yes, please specify.

10. Have you ever taken or attended a course on auditing or government contract audits? YES ____ NO ____

   A. If yes, please specify.

Response to these answers were then tabulated in total and according to stratification groups to help give an indication of the background characteristics of each group. The answers to questions 1. and 2. were used primarily in the mechanics of the tabulation process itself, while the answers to questions 4. to 10. are presented below by group. The response to background question 3. is tabulated in Appendix C.

a. EFD/OICC Engineers (EFDE)

The EFD/OICC engineers who work in the construction division are usually senior experienced engineers with prior experience at one or more ROICC offices. These engineers are then designated as the EFD/OICC construction contract contacts for the ROICC offices, both on matters of construction procedures and contract administration.

Answers to survey question 4. show that these engineers are known by different titles, such as project engineer, civil engineer, construction manager or supervisory civil engineer according to the EFD/OICC concerned. A breakdown of these respondent engineers by civil service rating shows the following results:

TABLE 4.

EFDE RESPONSE BY GS-GRADE

	GS-15	GS-14	GS-13	GS-12	TOTAL
WITH CCCO EXPERIENCE	5	5	6	14	30
WITHOUT CCCO EXPERIENCE	0	0	2	2	4
TOTAL	5	5	8	16	34

As for length in present position and months of government contract experience, the following means ($\overline{x}$) and standard deviations (s) were calculated for n number of replies:

TABLE 5.

EFDE POSITION LENGTH AND GOVERNMENT CONTRACT EXPERIENCE (MONTHS)

	WITH CCCO EXPERIENCE	WITHOUT CCCO EXPERIENCE	TOTAL BOTH GROUPS
POSITION LENGTH			
n	29	3	32
$\overline{x}$	53.0	39.3	51.7
s	58.9	-	56.6
GOVT. CONTRACT EXPERIENCE			
n	29	3	32
$\overline{x}$	121.8	42.3	114.1
s	111.6	-	100.9

It is interesting to note that nine out of 29 EFD/OICC engineers with CCCO experience have private contractor experience with a mean of 34.7 months. One EFDE without CCCO experience has 300 months private contractor experience.

Results of accounting backgrond questions eight to ten have been tabulated as follows:

TABLE 6.

EFDE ACCOUNTING, ACCOUNTING SYSTEMS and AUDITING KNOWLEDGE

	YES		NO	
	n	%	n	%
ACCOUNTING BACKGROUND				
WITH CCCO AUDIT EXPERIENCE	6	23.1	23	76.9
WITHOUT CCCO AUDIT EXPERIENCE	2	40.0	3	60.0
TOTAL	8	23.5	26	76.5
KNOW CONTRACTOR'S COST ACCOUNTING SYSTEMS				
WITH CCCO AUDIT EXPERIENCE	14	46.5	16	53.5
WITHOUT CCCO AUDIT EXPERIENCE	2	50.0	2	50.0
TOTAL	16	47.1	18	52.9
ATTENDED AUDIT COURSES				
WITH CCCO AUDIT EXPERIENCE	3	10.0	27	90.0
WITHOUT CCCO AUDIT EXPERIENCE	0	0	4	100.0
TOTAL	3	8.8	31	92.2

Of the eight EFDE's with accounting background, seven had more than one accounting course, two had extensive accounting experience and two did not specify. Of the 15 EFDE's with knowledge of construction contractors accounting systems, five had experience in these systems as contractor employees, two had educational type knowledge and eight did not specify.

For the three who have taken or attended a course on auditing or government contracts audits, one covered T.I.N. audits in Federal Publications Inc's Government Construction Contracting Course, and the other two did not specify.

b. ROICC - AROICC's (AROICC)

The ROICC's and AROICC's as the military officers in charge of the field construction offices were combined into one stratification group from the population. Because of the background differences between military officers and GS graded civilians, and the fact that their tours of duty at a particular ROICC office are usually limited to a two to four year time frame, determination of their separate background characteristics was considered important.

Their answers to question 4. showed a breakdown by position as follows:

TABLE 7.

OFFICE POSITIONS OF ROICC'S AND AROICC'S

	ROICC	DEPUTY ROICC SENIOR AROICC	AROICCS	TOTAL
WITH CCCO EXPERIENCE	15	5	28	48
WITHOUT CCCO EXPERIENCE	8	5	34	47
TOTAL	23	10	62	95

An additional breakdown by rank is as follows:

TABLE 8.

ROICC-AROICC RESPONSE BY MILITARY RANK

	0-5	0-4	0-3	0-2	0-1	TOTAL
WITH CCCO EXPERIENCE	9	11	17	7	4	48
WITHOUT CCCO EXPERIENCE	5	8	21	4	9	47
TOTAL	14	19	38	11	13	95

As far as length in present position and months of government contract experience are concerned, the following means and standard deviations were calculated for n number of replies:

TABLE 9.

ROICC-AROICC POSITION LENGTH AND GOVERNMENT CONTRACT EXPERIENCE (MONTHS)

	WITH CCCO EXPERIENCE	WITHOUT CCCO EXPERIENCE	TOTAL BOTH GROUPS
POSITION LENGTH			
n	48	47	95
$\overline{x}$	16.5	11.4	13.9
s	8.2	6.4	7.7
GOVT. CONTRACT EXPERIENCE			
n	48	47	95
$\overline{x}$	30.2	20.6	25.5
s	20.4	18.7	20.1

Again, it is interesting to note that only six out of 48 AROICC's with CCCO experience have private contractor experience with a mean of 13.3 months. Only two out of 47 AROICC's without CCCO audit experience had private contractor experience, one with 60 months and one with 24 months. Of the total 95 AROICC's, the eight with experience represent 8.4 percent of the total answered responses.

The results of the accounting background questions for the AROICC's has been tabulated as follows:

TABLE 10.

ROICC-AROICC ACCOUNTING, ACCOUNTING SYSTEMS and AUDITING KNOWLEDGE

	YES		NO	
	n	%	n	%
ACCOUNTING BACKGROUND				
WITH CCCO AUDIT EXPERIENCE	21	43.8	27	53.2
WITHOUT CCCO AUDIT EXPERIENCE	12	25.2	35	74.5
TOTAL	33	34.7	62	65.3
KNOW CONTRACTOR'S COST ACCOUNTING SYSTEMS				
WITH CCCO AUDIT EXPERIENCE	24	50.0	24	50.0
WITHOUT CCCO AUDIT EXPERIENCE	7	14.9	41	85.1
TOTAL	31	32.6	65	67.4
ATTENDED AUDIT COURSES				
WITH CCCO AUDIT EXPERIENCE	1	2.1	47	97.9
WITHOUT CCCO AUDIT EXPERIENCE	5	10.6	43	89.4
TOTAL	6	6.3	90	93.7

Of the 33 AROICC's with accounting background, nine had master's degrees in which accounting was included, 15 had taken more than one accounting course, and one had extensive

accounting experience, with eight not specifying. Of the 31 AROICC's with knowledge of construction contractors accounting systems, two had experience in these systems as contractor employees, 12 had on-the-job training from proposal review, 11 had educational type knowledge, and six did not specify. For the six who had taken or attended a course on auditing or government contracts audits, one attended Procurement Associated's Government Contract Audits course, four had taken auditing courses part of a masters program, and one did not specify.

c. ROICC Supervisory Civil Engineers (RSCE)

The RSCE is the primary technical advisor to the ROICC and AROICC's on matters pertaining to construction procedures and contract administration. In this position, he may supervise a staff of both construction engineers and inspectors or construction representatives, as they are titled. Since the RSCE does not change positions as often as the ROICC's and AROICC's, he provides some continuity in the daily operations of the ROICC office during transitions between ROICC's or AROICC's.

The engineer in this position is usually called a Supervisory Civil Engineer. The results of question four show that some offices also prefer to use the names Resident Engineer in Charge of Construction (REICC), Construction Engineer or General Engineer. The majority of respondents are in a supervisory position with only three respondents in

a ROICC staff engineer position. The breakdown of these engineers by their civil service rating is tabulated as follows:

TABLE 11.

RSCE RESPONSE BY GS – GRADE

	GS-13	GS-12	GS-11	GS-9	TOTAL
WITH CCCO EXPERIENCE	13	22	1	0	36
WITHOUT CCCO EXPERIENCE	2	13	1	1	17
TOTAL	15	35	2	1	53

As far as length in present position and months of government contract experience are concerned, the following means and standard deviations were calculated for (n) number of replies:

TABLE 12.

RSCE POSITION LENGTH AND GOVERNMENT CONTRACT EXPERIENCE (MONTHS)

	WITH CCCO EXPERIENCE	WITHOUT CCCO EXPERIENCE	TOTAL BOTH GROUPS
POSITION LENGTH			
n	36	17	53
$\bar{x}$	44.3	42.8	43.8
s	30.0	34.3	31.1
GOVT. CONTRACT EXPERIENCE			
n	36	17	53
$\bar{x}$	110.2	76.1	99.2
x	79.5	61.9	75.4

It is also of interest to note that 11 out of 36 RSCE with CCCO experience had private contractor experience, one engineer having 252 months or 21 years such experience and the other ten a mean of 30.1 months. In addition, six out of 17 RSCE without CCCO experience have a mean of 133.3 months of contract experience. Of the three stratification groups, the RSCE's have the highest percentage of individuals with private contractor experience with 32.1% (17/53) as compared to 29.4% (10/34) for the EFDE's and 8.4% (8/95) for the ROICC-AROICC's.

The results for the accounting background questions eight to ten, for the RSCE have been tabulated as follows:

TABLE 13.

RSCE ACCOUNTING, ACCOUNTING SYSTEMS, and AUDITING KNOWLEDGE

	YES		NO	
	n	%	n	%
ACCOUNTING BACKGROUND				
WITH CCCO AUDIT EXPERIENCE	3	8.3	33	91.7
WITHOUT CCCO AUDIT EXPERIENCE	2	11.8	15	88.2
TOTAL	5	9.4	48	90.6
KNOW CONTRACTOR'S COST ACCOUNTING SYSTEMS				
WITH CCCO AUDIT EXPERIENCE	16	44.4	20	55.6
WITHOUT CCCO AUDIT EXPERIENCE	4	23.5	13	76.5
TOTAL	20	37.7	33	62.3
ATTENDED AUDIT COURSES				
WITH CCCO AUDIT EXPERIENCE	3	8.3	33	91.7
WITHOUT CCCO AUDIT EXPERIENCE	2	11.8	15	88.2
TOTAL	5	9.4	48	90.6

Of the six RSCE's with accounting background two had taken more than one accounting course, one had accounting as part of a master's program and three did not specify their background. Of the 20 RSCE's with knowledge of construction contractors accounting systems, two specifically identified experience with private contractors, 11 had extensive on-the-job training and seven did not specify their basis of knowledge. For the five who had taken or attended a course on auditing or government contracts audits, three attended a Federal Publications Incorporation course on Cost Accounting Standards, and the other two did not specify.

2. Experience Level With CCCO Audits

In order to estimate the number of audits experienced by each group per year as well as to determine the average amount of each requested audit and its associated range, the following funnel type question was asked:

2. How many CCCO audits have you had any experience with in the following fiscal years?
FY 77 + 76T ___ FY 76 ___ FY 75 ___ FY 74 ___
(1st 9 mos.)

A. Of these, for those audits for which you have been the primary action designee, please list below the approximate dollar amount for each separate audit, either prime contractor or subcontractor. Please indicate after the dollar amount whether the proposal was for an additive or deductive change order.

PRIME CONTRACTORS FY 77 + 76T FY 76 FY 75 FY 74

SUBCONTRACTORS

B. If any of the audits you listed in 2A were requested by the contractor rather than required (The Truth in Negotiations Act requires audits for any negotiated contract

> modification exceeding $100,000), please relist these approximate dollar amounts below along with the reason the audit was requested.
>
> FY AMOUNT REASON REQUESTED

Response to several areas of this question series were too limited to be used. Under question two, only the space showing the number of audits experiences in FY 77 (first 9 months) + FY 76T was completed with regularity. Similarly, only the space for the approximate dollar amount of each separate audit under FY 77 + 76T in question part 2A was completed with regularity. It appears that the remaining question parts violated the design concept of requiring short factual information without a great deal of extra research effort and were accordingly left blank by respondees with more pressing daily duties. This being the case, only the response calculations from the two above-mentioned areas will be presented.

The table below presents the calculations taken from experienced respondees only. It should be noted that question 2A. was designed to yield the number of audits handled by year by asking the primary action designee only to respond. This table assumes that the respondees have answered accordingly.

TABLE 14.

CCCO AUDITS EXPERIENCED PER YEAR

	NUMBER EXPERIENCED			AMOUNTS		
	NUMBER	MEAN	STD DEV	NUMBER	MEAN	STD DEV
	n	$\bar{x}$	s	n	$\bar{x}$	s
(1) EFDE	34	3.32	2.85	15	$443,207	$632,090
(2) AROICC	43	2.60	2.55	72	$402,306	$675,535
(3) RSCE	34	2.12	2.38	16	$219,563	$132,074
TOTAL (1) (2) (3)	111	-	-	103	$379,875	-
TOTAL (2) (3)	77	-	-	88	$369,080	-

From these figures, estimations of both the number of audits handled per year in NAVFAC in the continental United States, as well as the total dollar amount of these audits, can be made. These figures may be calculated under two sets of assumptions. The first set of assumptions combines the use of the total numbers of respondents of all three groups in the number of audits experienced category against the number of experienced population and uses the total number of audits from the amount categories to determine a number of audits for the entire experienced population. (111 respondents/179 experienced population members = 103 audits/x number of total audits per experienced population, x = 166 audits). This number is then multiplied by the mean of all three groups to obtain the yearly dollar amount of NAVFAC audits conducted of $63 million. (166 audits x $379,875/audit = $63,059,250, use $63 million). The second

set of assumptions uses only the figures from the AROICC's and RSCE's in the above tables. This assumption is made to eliminate the double counting possible by including EFDE's. This assumption is made on the basis that all CCCO audits are handled by ROICC office personnel as the primary action designees. The calculations for these assumptions yield 101 audits for a total of approximately $37 million. (77 respondents/127 experienced population members = 88 audits x number of total audits per experienced population, x = 101; 101 x $369,080/audit = $37,277,080, use $37 million).

C. PUBLISHED GUIDANCE

To investigate the area of published guidance, the survey questionnaire contained the following seven questions:

3. Where do you believe the most specific guidance for obtaining CCCO audits is to be found?
ASPR ____ P-68 ____ EFD or OICC Instruction ____
OTHER (please Specify)

4. Off-hand, are you familiar with your EFD or OICC's administrative procedures for obtaining construction contract change order audits?
YES ____ NO ____
A. If yes, please briefly describe what you believe are the main procedural steps.

5. How do you rate these administrative procedures with respect to the specifics of the direction provided?
VERY SPECIFIC ____ SPECIFIC ____ SPECIFIC IN MAJOR AREAS ____
GENERAL ____ VAGUE ____

6. Do you believe any changes in these administrative procedures are needed? YES ____ NO ____
A. If yes, please briefly list these changes.

17. To what publications or references do you go to find out more information about CCCO audits? ______________
____

18. Do you feel there is a need for any additional informational references in the CCCO audit area?
YES ____ NO ____
A. If yes, list what you believe is additionally required.

19. Do you feel there is a need for one informational reference to tie all available information together on a general basis?
YES ____ NO ____

1. Most Specific Guidance

Survey question 3. asked where the respondents believe the most specific guidance for obtaining CCCO audits is to be found. The answers were given as follows:

ASPR	P-68	EFD or OICC INSTRUCTION	OTHERS
35	35	40	4

Breaking these answers down as percentages of the response from each of the three groups gives the following table:

TABLE 15.

PERCENTAGE COMPARISON OF GROUP ANSWERS ON QUESTION 3.

	ASPR	P-68	EFD INST	OTHERS
EFDE	21.2	33.3	42.4	3.0
AROICC	26.7	26.7	42.2	4.4
RSCE	41.2	35.3	20.6	2.9

EFDE's and AROICC's seem to generally agree in their choices, while the choices of the RSCE's do not agree with the EFDE - AROICC's on ASPR and EFD instructions. It is also interesting to note that these responses indicate no real agreement on the most specific guidance.

2. Administrative Procedures

When asked if they were familiar with their EFD or OICC's administrative procedures for obtaining CCCO audits by question 4., 80.4% of the total respondents indicated yes. There was general agreement among the three groups as affirmative replies were received from 86.2% of the EFDE's, 76.6% of the AROICC's and 80.6% of the RSCE's. However, when the second part of the question asked for a description of the main procedural steps, 24 percent replied with the most general statement possible, "the OICC/ROICC requests an audit from DCAA." Thirty-six percent add the fact that the DD-form 633 is required to this general statement while only 29% go into enough detail to add that the OICC/ROICC reviews the contractor's proposals and identifies specific areas of concern.

When asked to rate these administrative procedures with respect to the specifics of the direction provided, the following total breakdown was received:

VERY SPECIFIC	SPECIFIC	SPECIFIC IN MAJOR AREAS	GENERAL	VAGUE
17 or 18.9%	31 or 34.4%	11 or 12.2%	25 or 27.8%	6 or 6.7%

Viewed in a dichotomous manner, 65.5% viewed the specifics of direction provided as above specific in major areas and 34.5% viewed the direction as general to vague. In addition, when asked if they believed any changes in these administrative procedures are needed, 75.3% replied no and 24.7% replied yes. Of the 22 yes replies and the 13 who gave

suggestions, seven listed the change of the ROICC providing a list of specific items for DCAA to review in the audit as the major change they felt was needed.

3. Informational References

Survey question 17. asked which publications or references were used to find out more information about CCCO audits. Results of this question were as follows:

ASPR	P-68	NONE	EFD INST	OTHERS
40 or 33.1%	36 or 29.8%	15 or 12.4%	14 or 11.6%	16 or 13.2%

These results are interesting because of the very general nature of information usually available in ASPR. Also of interest, is the 12.4% for no references (none) and the inclusion of only two mentions of CECOS 203/74 (old P-79) Guide for Construction Contract Negotiations in the others category. The Corps of Engineers' Construction Contract Negotiating Guide was also mentioned twice in the others category.

Next, the question 18. asked if respondents felt the need for any additional informational references in the CCCO audit area. In reply, 51 or 54.8% replied yes and 42 or 45.2% replied no. By group, 48.4% of the EFDE's said yes, 64.9% of the AROICC's said yes and 48.4% of the RCSE's said yes. Of the 51 affirmative responses and 32 who advanced suggestions, 20 listed that they believed complete and detailed information and guidance on procedures of CCCO audits was needed. Again, the majority, or eleven of these were AROICC's.

The last question on information references, number 19., asked respondents if they felt the need for one informational reference to tie all available information together on a general basis. The overwhelming majority of respondents, 73.8%, replied yes, while only 26.2% replied no. By groups we see margins of 2:1 for the EFDE's and RSCE's and over 4:1 for AROICC's. This affirmative response was one of the strongest in the survey.

D. PERSONAL CONSULTATION GUIDANCE

To determine respondent opinion on who should be the "expert" willing and able to provide CCCO audit guidance as well as who the primary action designee should be, the following questions were asked.

20. On a permanent basis, who (position & organization) do you feel should be the most knowledgeable person on CCCO audits? ______________________
    A. Should the person in this position have any extra or special education or training in CCCO audits?
    YES ____ NO ____
    B. If yes, what do you suggest?

21. Who do you now ask (position & organization) if you want personal guidance or information on CCCO audits?

    ____

    A. What percentage of the time is this person able to answer questions to your satisfaction?
    0% 20% 40% 50% 60% 80% 100%

23. Who (position & organization) do you feel should be the primary action designee for coordinating all aspects of a particular CCCO audit with DCAA? ______________

24. Who (position & organization) is now the primary action designee for handling CCCO audits in your office?

    ____

1. CCCO Audit "Expert"

Question number 20. asked the respondents who, by position and organization, do you feel should be the most knowledgeable person on CCCO audits. Posed in free answer form, the results were tabulated by organization identification because the questions were generally answered in this manner:

CONTRACTS DIVISION-02	ROICC OFFICE	CONSTRUCTION DIVISION-05	AUDITOR	ROICC CONTRACT SPECIALIST
53 or 49.5%	25 or 23.4%	23 or 21.5%	4 or 3.7%	2 or 1.9%

When these responses are broken down into the three groups, we can see there is little agreement on this question. Only the construction division-05 receives the same approximate percentage from all three groups.

TABLE 16.

PERCENTAGE COMPARISON OF GROUP ANSWERS ON QUESTION 20.

	CONTRACTS DIVISION-02	ROICC OFFICE	CONSTRUCTION DIVISION-05	AUDITOR	ROICC CONTRACT SPECIALIST
EFDE	73.1	3.8	19.2	3.8	0
AROICC	43.8	27.1	20.8	4.2	4.2
RSCE	39.4	33.3	24.2	3.0	0

It should be pointed out that these replies indicate to some extent the different practices in the EFD/OICC's. The majority of EFD/OICC's refer CCCO audit questions directly to their contracts division-(02), while others

refer them to 02 through the construction division-(05). Still others leave these type questions to be handled between the ROICC action designee and the auditor without involving either 02 or 05 if possible.

The second part to Question 20. requested opinions as to whether the CCCO audit "expert" should have any extra or special education or training in CCCO audits. The response to this question was an overwhelming 84.6% yes and only 15.4% no. Asked for clarification as to what this special education or training in CCCO audits should be, 25 out of 77 indicated attendance at courses on DCAA audits while 12 out of 77 indicated the need for actual experience in performing CCCO audits. Additionally, 9 out of 77 replies indicated both of the above suggestions. Of the remaining replies, 12 out of 77 indicated the need for this person to have an accounting background.

Question 21 attempted to determine who was now seen as the CCCO audit expert and what level of satisfaction was expressed with this arrangement. Results were as follows:

CONTRACTS DIVISON-02	CONSTRUCTION DIVISION-05	AUDITOR	OTHERS
59	21	18	12

Again, little agreement is seen between the three groups as shown by this table comparing the percentages of each groups response for the main choices.

TABLE 17.

PERCENTAGE COMPARISON OF GROUP RESPONSE ON QUESTION 22.

	CONTRACTS DIVISION-02	CONSTRUCTION DIVISION-05	AUDITOR	OTHERS
EFDE	77.4	0	9.7	12.9
AROICC	34.0	27.7	23.4	14.9
RSCE	61.8	23.5	11.8	2.9

To part A of Question 22., which asks what percentage of the time is this person able to answer questions to your satisfaction, the following distribution of response frequencies was received:

TABLE 18.

RESPONSE TO QUESTION 22 A.

	20%	40%	50%	60%	70%	100%
CONTRACTS DIV-02	5	3	6	4	22	16
CONTRACTS DIV-05	2	1	3	4	7	4
AUDITOR	0	3	3	2	3	4

This distribution would seem to indicate greatest satisfaction with 02 answers and the least satisfaction with the auditor's answers, with 05 answers in the middle.

2. CCCO Audit Action Designee

Question 24. asks who by position and organization is now the primary action designee for handling CCCO audits in your office. Since this question does add the qualification

of answering within each person's own office, the results will be presented in a dichotomous EFD/OICC and ROICC manner. As in the CCCO audit "expert" section above, the majority of responses indicated the organizational unit only without a position description, so the results are presented in this form also.

EFD/OICC RESPONSE

CONTRACTS DIVISION-02	CONSTRUCTION DIVISION-05	ROICC/AROICC RSCE	OTHERS
14 or 48.3%	5 or 17.2%	9 or 31.0%	1 or 3.4%

ROICC OFFICE RESPONSE

CONTRACTS DIVISION-02	CONSTRUCTION DIVISION-05	ROICC/AROICC RSCE	OTHERS
11 or 13.9%	6 or 7.6%	57 or 72.2%	5 or 6.3%

Within the ROICC office the percentage of replies of the AROICC's and RSCE were similar except for the involvement of 02 and 05 as the following table shows:

TABLE 19.

ROICC OFFICE PERCENTAGE COMPARISON OF RESPONSE TO QUESTION 24.

	CONTRACTS DIVISION-02	CONSTRUCTION DIVISION-05	ROICC/AROICC RSCE	OTHERS
AROICC	6.3	12.5	75.0	6.3
RSCE	20.7	0	72.4	6.9

Question 23 asks the theoretical question, who by position and organization do you feel the primary action

designee for coordinating all aspects of a particular CCCO audit with DCAA should be? This question is different from the question just discussed in two aspects. First, the phrase "in your office" has not been included, and second, the concept of contact with DCAA is introduced. Accordingly, these two changes appear to alter the previous results somewhat, although there is no means of verifying that these two factors themselves are the cause of this difference. Results of response tabulation show the following:

CONTRACTS DIVISION-02	CONSTRUCTION DIVISION-05	ROICC/AROICC RSCE	OTHERS
32 or 32%	20 or 20%	42 or 42%	6 or 6%

As viewed by percentage of response within groups, the following information is presented:

TABLE 20.

PERCENTAGE COMPARISON OF GROUP RESPONSE ON QUESTION 23.

	CONTRACTS DIVISION-02	CONSTRUCTION DIVISION-05	ROICC/AROICC RSCE	OTHERS
EFDE	26.9	23.1	34.6	15.4
AROICC	26.2	28.6	40.5	7.7
RSCE	43.8	6.2	50.0	0

The EFDE's and AROICC's seem to be closer in agreement in their views than either one of them with the RSCE's.

E. AUDIT RESULTS AND TIMELINESS

One of the primary intentions of the survey questionnaire in determining the state of CCCO audits in the construction contract administration world was some indication of the quality and timeliness of results being received. To ascertain the opinion of experienced personnel, the following question series was posed.

7. How would you rate the initial audit results you now receive by using these administrative procedures with regard to accurately and fairly representing what you believe to be the government position?
   COMPLETELY ACCURATE ___ MOSTLY ACCURATE ___
   MAJOR POINTS ACCURATE ___ MARGINALLY ACCURATE ___
   NOT ACCURATE ___

8. How long does it usually take from the time you request an audit until the time you receive a copy of the audit report in the mail? (Please specify to the nearest week).

9. How long does it usually take from the time you receive an audit report until the time negotiations are convened? (Please specify to the nearest week).

10. From your experience, what percentage of the initial audit reports you receive have you been required to rectify before using because of more than a minor discrepancy? (Please circle the appropriate percentage).
    0% 20% 40% 50% 60% 80% 100%

    A. If you did not say 0%, what do you believe are usually the most frequent reasons for rectification rework?

    B. Please list any recommendations you may have to reduce this rework problem.

11. From your experience, what percentage of the time has the need to rectify initial audit results ever caused a lengthening in the time period that elapsed before negotiations could be scheduled and held?
    0% 20% 40% 50% 60% 80% 100%

    A. For those CCCO audits for which you have been the primary action designee, please list the number of times this has happened and the time periods involved.
       0-2 wks 2-4 wks 4-8 wks 8-12 wks 12 wks + (Please specify)

12. What percentage of the time have you negotiated a change order disregarding some major aspect of the audit report because you felt it did not accurately represent the government's position?
0% 20% 40% 50% 60% 80% 100%

Replies to these questions will be viewed in separate results and timeliness sections.

1. CCCO Audit Results

Survey question 7. asked respondents to rate the initial audit results they now receive by using the administrative procedures they described earlier in the questionnaire with regard to accurately and fairly representing what they believe to be the government position. Of the five choices available, results were tabulated as follows:

COMPLETELY ACCURATE	MOSTLY ACCURATE	MAJOR POINTS ACCURATE	MARGINALLY ACCURATE	NOT ACCURATE
3 or 2.9%	36 or 35.0%	26 or 25.2%	29 or 28.2%	9 or 8.7%

Viewed in a dichotomous manner, these results show that 62.1% believe the results are "major points accurate" and above while 36.9% believe the results are "marginally accurate" and below. Examination by percentage choice between EFD/OICC and ROICC offices shows the following:

TABLE 21.

EFD/OICC VS. ROICC OFFICE RESPONSE TO QUESTION 7.

	COMPLETELY ACCURATE	MOSTLY ACCURATE	MAJOR POINTS ACCURATE	MARGINALLY ACCURATE	NOT ACCURATE
EFDE	0	40.6	18.8	25.0	15.6
ROICC	5.0	21.7	33.3	35.0	6.7

One might infer from these results that EFDE's feel the results are more accurate than do the AROICC's or RSCE's in the field.

Next, construction contract administrators were asked by question 10. to draw on their personal experience and indicate what percentage of the initial audit reports they receive require rectification rework before using because of more than a minor discrepancy. The frequency distribution of replies was tabulated as follows:

0%	20%	40%	50%	60%	80%	100%
28	29	4	8	4	9	13
(29.5%)	(30.5%)	(4.2%)	(8.4%)	(4.2%)	(9.5%)	(13.7%)

These results could be viewed in two dichotomous manners. One, 29.5% of respondees did not find it necessary to do any rectification rework, while 71.5% did find rework necessary on some percentage of audit reports they received. Two, 13.7% of respondees had all audits reworked, while 52.8% only reworked some. Both of these viewpoints could

include responses based on only one observation or the handling of one audit, but the data available does not provide any means of determining this occurance. Again, views between the EFD engineers and the AROICC's and RSCE's in the ROICC offices varied as indicated by the response. The eight percentage choices in the question were grouped into 3 groups to facilitate this comparison on the basis of observation of response frequency.

TABLE 22.

EFD/OICC VS ROICC OFFICE RESPONSE TO QUESTION 10.

	$0\% \leq 30\%$	$31\% \leq 70\%$	$71\% \leq 100\%$
EFDE	75.9	10.3	13.8
AROICC-RSCE	53.0	19.7	27.3

For those respondents who did not answer 0% to question part A., 14 out of 50 who replied indicated that they believed the rework problem arose out of the contractor's overhead proposals either from questions on the definitions of overhead and items which were allowable under ASPR, or from a lack of sufficient breakdown and information received. Eleven indicated that they believed the problem results from the fact that DCAA auditors were only able to provide a cursory audit effort. Nine felt that rework was necessary because DCAA auditors do not understand construction contracts or construction contractors.

Next, question part B., asks for respondent recommendations on how to reduce this rework problem. Twenty-four respondents out of 53 indicated some form of increased communication between the ROICC office and the auditor. Fourteen of these recommended some form of direct verbal contact while ten suggested the forwarding of a detailed item by item review request letter to the auditor. Thirteen suggested that the auditors be provided construction contract experience or education.

Since DCAA audit reports are advisory in nature, survey question 12. asks respondents what percentage of the time have they negotiated a change order disregarding some major aspect of the audit report because they felt it did not accurately represent the government's position. The frequency distribution of replies received was as follows:

0%	20%	40%	50%	60%	80%	100%
33 (33.7%)	26 (26.5%)	3 (3.1%)	10 (10.2%)	4 (4.1%)	4 (4.1%)	18 (18.4%)

Again, these results can be viewed in the same two dichotomous manners as used for the preceding analysis. One, 33.7% of respondents negotiate a change order disregarding some major aspect of the audit report zero percent of the time, while 66.3% disregard some major aspect part or all of the time. Two, 18.4% always disregard some major aspect of the audit report while 81.6% do not always disregard at least one major aspect in each audit report. The difference

between EFDE results and those of the AROICC's and RSCE in the ROICC offices is again evident:

TABLE 23.

EFD/OICC VS ROICC OFFICE RESPONSE TO QUESTION 12.

	$0\% \leq 30\%$	$31\% \leq 70\%$	$71\% \leq 100\%$
EFDE	71.4	19.0	9.5
AROICC-RSCE	57.1	16.9	26.0

2. CCCO Audit Timeliness

The purpose in asking questions about the timeliness of audit results was to determine how much time the requirement to perform an audit, or how much the time required to rework an audit, effect change order negotiation's timing. Survey question 8. asks how long does it usually take from the time you request an audit until the time you receive a copy of the audit report in the mail to the nearest week? Once these estimates were tabulated, calculations produced the following means and standard deviations:

TABLE 24.

WEEKS TO RECEIVE AUDITS

	NUMBER n	MEAN $\bar{x}$	STD. DEV. s
EFDE	29	6.6	3.2
AROICC	43	7.3	3.0
RSCE	33	8.3	4.0

Combination of the AROICC's and RSCE's responses yields the following ROICC office results:

	n	$\bar{x}$	s
AROICC-RSCE	77	7.7	3.5

Partial explanation for the difference between receipt lengths at the EFD's and ROICC offices might be the fact that some EFD/OICC's have the audits forwarded to the ROICC offices through the contracts division-(02) and/or the construction division-(05) for review. Normal handling plus mail time would easily become a week's difference.

Next, the length of time it usually takes from the time an audit is received until the time negotiations are convened was asked by question 9. Calculations for these responses were as follows:

TABLE 25.

WEEKS TO SCHEDULE NEGOTIATIONS

	NUMBER n	MEAN $\bar{x}$	STD. DEV. s
EFDE	25	2.4	0.9
AROICC	40	3.0	2.2
RSCE	36	2.7	1.9

Combination of the AROICC's and RSCE's responses would yield the following ROICC office results:

	n	$\bar{x}$	s
AROICC - RSCE	76	2.9	2.1

Again, we see some differences in mean values response between the EFDE's and the ROICC offices. The difference in mean weeks is small, however the difference in standard deviations, and therefore the range of responses, is more significant.

Delving deeper into the concept that audit rework may cause delays in negotiating change orders, survey question 11. asks that respondents (from their experience) indicate what percentage of the time the need to rectify initial audit results has ever caused a lengthening in the time period that elapsed before negotiations could be scheduled and held. The frequency distributions of the replies received was as follows:

0%	20%	40%	50%	60%	80%	100%
39 (46.4%)	16 (19.0%)	4 (4.8%)	7 (8.3%)	4 (4.8%)	2 (2.4%)	12 (14.3%)

Here, 46.4% replied that the need to rework audits has never caused delay of negotiating change orders, while 53.6% have experienced delays some percentage of the time. On the other hand, 14.3% have experienced delays 100 percent of the time. It should be noted that of the results from the three multiple percentage choice-type questions asked in this section on timeliness and results, questions 10., 11., and 12., a small group of from 13.7% to 18.4% has chosen

100% in all three questions. This would seem to indicate a small corps of totally dissatisfied audit users.

The difference between the response percentages of the EFDE's and AROICC-RSCE's on question 11. does not appear too large, however:

TABLE 26.

EFD/OICC VS ROICC OFFICE RESPONSE TO QUESTION 11.

	0% ≤ 30%	31% ≤ 70%	71% ≤ 100%
EFDE	75.0	10.0	15.0
AROICC-RSCE	62.5	20.3	17.2

Part A. to question 11. then asks, for those CCCO audits for which you have been the primary action designee, please list the number of times this has happened and the time periods involved. The distribution of replies received was as follows:

WEEKS

0-2	2-4	4-8	8-12	16
13	29	7	1	1

The midpoints of each of these ranges was then used to calculate a mean of 3.3 weeks and a standard deviation of 2.6 weeks.

F. PROPOSAL BREAKDOWN AND OVERHEAD EVALUATION

One of the key determinants thought of as increasing the efficiency of audit results is submission by the contractor of a proposal breakdown in enough detail to permit thorough ROICC and auditor review. In addition, the contractor's overhead portion of the proposal was frequently thought of as the area where insufficient detail was usually received. Therefore, to provide insight into these two areas, the following survey question series was asked:

13. What percentage of the time do you encounter problems with receiving an adequate initial change order proposal breakdown from the contractor when an audit is required?
    0% 20% 40% 50% 60% 80% 100%

    A. If you did not say 0%, which of the following areas of the proposal do contractors seem the most reluctant to provide an adequate breakdown for?
    LABOR COST ___ MATERIAL COSTS ___
    EQUIPMENT COSTS ___ FIELD OVERHEAD COSTS ___
    HOME OFFICE OVERHEAD COSTS _____

14. Which areas of a contractor's change order proposal do you find the most difficult to evaluate (please rank in order of most difficulty)
    LABOR COSTS _____ MATERIAL COSTS _____
    EQUIPMENT COSTS _____ FIELD OVERHEAD COSTS _____
    HOME OFFICE OVERHEAD COSTS _______

15. What percentage of the time do you experience problems specifically with the overhead pricing section of a contractors change order proposal?

    0% 20% 40% 50% 60% 80% 100%

    A. If you did not say 0%, what do you believe are the major causes of this overhead evaluation problem?

16. Do you feel that some contractors require increased attention or special handling of their overhead proposals because of their extensive government contract experience? YES ____ NO ____
    If yes, what special procedures do you recommend?

Replies to these questions will be viewed in separate proposal breakdown and overhead evaluation sections.

1. Receipt of Breakdowns

Survey question 13. asks respondents what percentage of the time they encounter problems with receiving an adequate initial change order proposal breakdown from the contractor when an audit is required. The frequency distribution of percentages indicated was as follows:

0%	20%	40%	50%	60%	80%	100%
22 (19.8%)	16 (14.4%)	8 (7.2%)	18 (16.2%)	19 (17.1%)	8 (7.2%)	20 (18.0%)

The distribution results appear fairly constant over the entire range of percentages. Only 19.8% indicated that they do not encounter any problems with receiving adequate proposal breakdowns, while 18% indicated that they experienced problems 100 percent of the time.

Part A. of this question asks those who did not say zero percent in the first part of the question to indicate which of the following cost areas, labor, material, equipment, field overhead, or home office overhead, that the contractors seem the most reluctant to provide an adequate breakdown for. Because this question did not request that these areas be ranked as was originally intended, two types of responses were received, ranked responses and sets of check marks or x's. Since only five of 81 responses used ranking, the analysis was performed on the 76 sets of check marks or x's.

These sets ranged from checking one cost area to checking all five cost areas. The total numbers checked per cost area were tabulated as follows:

LABOR	MATERIAL	EQUIPMENT	FIELD OVERHEAD	HOME OFFICE
24	17	30	41	57

This tabulation indicates the contractors are most reluctant to provide detailed proposal breakdowns in this order - home office overhead, field overhead, equipment, labor and then, material costs. Since the rankings per group were essentially the same, no separate group breakdown will be presented.

To determine if contract auditors experience the same type of reluctance on the part of the contractors, survey question 27. asks respondents, "has the auditor ever encountered problems with the contractor not cooperating in providing free access to contract books, records, etc?" Affirmative replies were received from 57.5% of the respondents and negative replies were received from 42.5%. By group, replies from the AROICC's and SCE's were approximately 50-50, while EFDE's replied 82.1% affirmative and only 17.9% negative. Persons surveyed were then asked by question part A. if yes, what percentage of the time does this happen? The frequency distribution of replies ranged as follows:

20%	40%	50%	60%	80%	100%
30 (51.7%)	8 (13.8%)	10 (17.2%)	1 (1.7%)	4 (6.9%)	5 (8.6%)

The replies by group percentages are all approximately the same and in accordance with the above results.

2. Proposal Evaluation Difficulty

In addition to finding out which cost areas contractors are most reluctant to provide detailed proposal breakdowns for, question 14. asks persons surveyed to rank in order of most difficult to evaluate those areas of a contractor's change order proposal. The ranking then received, which consisted of both full and partial rankings of all five cost areas were summed with means and standard deviations calculated for each. With one as the most difficult to evaluate, and five as the least difficult, the results are as follows:

TABLE 27.

COST AREA EVALUATION DIFFICULTY

	LABOR	MATERIAL	EQUIPMENT	FIELD OVERHEAD	HOME OFFICE OVERHEAD
n	59	55	60	61	69
$\bar{x}$	2.71	4.09	2.95	2.62	1.96
s	1.44	1.09	1.20	1.08	1.37

The calculations suggest the following order of difficulty in evaluating the contractor's proposals - home office overhead costs, field office overhead costs, labor costs, equipment costs and material costs. The only difference between this ranking and the one showing contractor reluctance

to provide sufficient proposal breakdown, is a switch in ordering of labor and equipment costs.

3. Overhead Evaluation

Pre-survey research and interviews strongly suggested that evaluation of both the field and home office overheads of contractors' proposals proved the most difficult for contract administrators. While the results of question 14. as discussed above tends to confirm this belief, it is also desirable to determine the extent of this evaluation problem. Survey question 15. asks respondents what percentage of the time they experience problems specifically with the overhead pricing section of a contractors' change order proposal. Frequency and percentage of replies was as follows:

0%	20%	40%	50%	60%	80%	100%
11	25	8	19	19	9	16
(10.8%)	(24.5%)	(7.8%)	(18.6%)	(13.7%)	(8.8%)	(15.7%)

Viewed dichotomously, only 10.8% experience problems none of the time while 89.2% experience overhead evaluation problems part of the time. Also, 15.7% experience overhead evaluation problems 100% of the time. Viewed by groups, the percentage of response per reply in each group was calculated as follows:

TABLE 28.

PERCENTAGE COMPARISON OF GROUP RESPONSE ON QUESTION 15.

	$0 \leq 30\%$	$31 \leq 70\%$	$71 \leq 100\%$
EFDE	31.0	51.7	17.2
AROICC	32.5	37.5	30.0
RSCE	42.4	33.3	24.2

Question part A then asks respondents, if they did not answer 0%, what they believed the major causes of this overhead evaluation problem were. Out of 83 replies, 22 or 26.5% indicated that the difference between the government's and the contractor's definitions of overhead, and the question of allowability of certain items in government contracts were the major cause of this overhead evaluation problem. Two other reasons received 14 responses, or 16.9% of total replies each. The first reason was that each contractor has developed a different cost accounting system while the second was that the lack of sufficient back-up detail in the proposal caused the problem. The fourth and fifth highest response indicated by 10.8% of the total replies was that contractors were attempting to maximize profits while 7.2% of the total replies indicated they believed double costing was the major cause.

Lastly, the population surveyed was asked by question 16. if they felt that some contractors require increased attention or special handling of their overhead

proposals because of their extensive government contract experience. Of the 99 replies received, 68.7% indicated yes and 31.3%, no. By group, the ratio of yes to no replies ranged from 4:1 for the AROICC's to 2:1 for the EFDE's to 1:1 for the RSCE's. As a follow-up to this question, the yes respondents are then asked what special procedures they would recommend. Of 49 replies, 7 or 18.4% believe periodic audits by the same auditor would be beneficial. Because of the fewness in number of audits, as well as the insignificant dollar amount as a percentage of the DCAA workload, this proposal does not seem practical. Eight replies or 16.3% indicated that about the only course available was for contract administrators to realize the situation and increase attention to the overhead proposals of those contractors. Six replies or 12.2% believed that firm guidelines on ASPR requirements pertaining to overhead should be issued to contractors. Five replies or 10.2% indicated that records should be kept on contractors prior negotiated overhead rates. There were three replies for each of the following suggestions. One, closer ROICC-DCAA contact, two, identify specific areas for DCAA audit investigation, three, develop standard overhead for each such contractor.

G. INTERRELATIONSHIPS WITH DCAA

Because the receipt of effective audit reports depends upon a close working relationship between the contract administrators and the contract auditors, investigation of

the state of the current relationship between these two parties was undertaken. A series of questions dealing with mutual knowledge, level of communications and perceived problem areas was developed. This series of questions was posed as follows:

22. How familiar are you with the Defense Contract Audit Agency (DCAA) and its role in auditing the different types of government contracts?
VERY KNOWLEDGEABLE ____ KNOWLEDGEABLE IN MOST AREAS ____
GEN. KNOWLEDGEABLE ____ KNOWLEDGEABLE IN CONSTRUCTION
ONLY ____ SOME KNOWLEDGE IN CONSTRUCTION ONLY ____

25. Have you ever made contact with the DCAA auditor before his audit to discuss various aspects of the contractors proposal? YES ___ NO ___
A. If yes, what percentage of the time do you do this?
0% 20% 40% 50% 60% 80% 100%

B. If yes, please comment on how helpful this has been.

26. What percentage of the time do you maintain contact with the DCAA auditor during his audit?
0% 20% 40% 50% 60% 80% 100%
A. Do you feel this type of contact is, or would be helpful?
YES ____ NO ____

27. To your knowledge, has the auditor ever encountered problems with the contractor not cooperating in providing free access to contract books, records, etc.? YES ____ NO ____

28. Do you believe that a contract administration/contract audit interface problem exists? YES ____ NO ____
A. If yes, what do you conclude are the basic causes of this problem?

B. If yes, do you believe this problem adversely effects the CCCO audit results? YES ___ NO ___

C. If yes, in your opinion how best can the interface problem be solved?

29. From your experience, how do you rate the contract auditors knowledge of the operations of construction contractors?
VERY KNOWLEDGEABLE ___ KNOWLEDGEABLE IN MOST AREAS ___
GENERALLY KNOWLEDGEABLE ___ KNOWLEDGEABLE IN SOME AREAS ___
KNOWLEDGEABLE IN FEW AREAS _____

Responses to the questions have been analyzed and presented in the following format: mutual knowledge, levels of communication and audit interface problems.

1. Mutual Knowledge

Persons surveyed were asked two questions in this regard. The first question concerned their familiarity with DCAA and the second question concerned their opinion of the DCAA auditor's knowledge of construction contractors. Survey question 22. asks respondents how familiar are you with the Defense Contract Audit Agency and its role in auditing the various types of government contracts. Responses to this question were tabulated as follows:

VERY KNOWLEDGEABLE	KNOWLEDGEABLE IN MOST AREAS	GENERALLY KNOWLEDGEABLE
3 or 2.8%	10 or 9.3%	30 or 28.0%

KNOWLEDGEABLE IN CONSTRUCTION ONLY	SOME KNOWLEDGE IN CONSTRUCTION
38 or 35.5%	26 or 24.3%

A comparison by groups produces some differences in the response percentages as follows:

TABLE 29.

PERCENTAGE COMPARISON OF GROUP RESPONSE TO QUESTION 22.

	KNOW. MOST AREAS +	GENERAL KNOW.	KNOW. CONST. ONLY	SOME KNOW. IN CONST.
EFDE	16.7	43.3	23.3	16.7
AROICC	4.7	20.9	46.5	27.9
RSCE	17.6	23.5	32.4	26.5

The results of very knowledgeable and knowledgeable in most areas were combined because of their fewness in number.

Next, personnel surveyed were asked by question 29. to rate from their experience the contract auditors knowledge of the operations of construction contractors. Responses to this question were as follows:

VERY KNOWLEDGEABLE	KNOWLEDGEABLE IN MOST AREAS	GENERALLY KNOWLEDGEABLE	KNOWLEDGE IN SOME AREAS	KNOWLEDGEABLE IN FEW AREAS
1 or 1.0%	21 or 21.4%	21 or 21.4%	24 or 24.5%	31 or 31.6%

Preview of these results show over 50 percent of the responses to be in the bottom two categories. Comparison of percentage choice by group shows the following:

TABLE 30.

PERCENTAGE COMPARISON OF GROUP RESPONSE TO QUESTION 29.

	KNOW. MOST AREAS +	GENERAL KNOW.	KNOW. IN SOME AREAS	KNOW. IN FEW AREAS
EFDE	22.2	18.5	25.9	33.4
AROICC	12.8	25.6	33.4	28.2
RSCE	34.3	18.8	12.5	34.4

2. Levels of Communication

Survey questions in this area were concerned with the levels of communication both before and during the course

of a CCCO audit. Question 25. asks contract administrators if they have ever made contact with the DCAA auditor before he initiates his audit to discuss various aspects of the contractor's proposal. Approximately two-thirds of the respondents replied yes, while one-third replied no. Those who replied yes were then asked to indicate what percentage of the time they initiated this prior contact with the auditor. The following frequency of percentages was indicated:

20%	40%	50%	60%	80%	100%
22 (31.9%)	9 (13%)	14 (20.3%)	3 (4.3%)	3 (4.3%)	18 (26.1%)

This distribution indicates that even though two-thirds initiate prior contact, more than one-half of these people do it 50% of the time or less. In addition, a response percentage within each group was calculated as follows:

TABLE 31.

PERCENTAGE COMPARISON OF GROUP RESPONSE TO QUESTION 25.

	0% $\leq$ 30%	31% $\leq$ 70%	71% $\leq$ 100%
EFDE	50.0	37.5	12.5
AROICC	15.4	38.4	38.5
RSCE	37.0	37.7	25.9

A combined ROICC office response was also calculated.

AROICC-RSCE	26.4	37.7	35.9

ROICC field personnel would appear to initiate contact a higher percentage of the time. Lastly, part B of this question requests those who answered yes to making prior contact to comment on how helpful they believe this has been. Of those commenting, 67.8 percent replied with comments indicating that this type of contact had proved very helpful, while 16.9 percent indicated somewhat helpful, and 13.6 percent marginally helpful.

Survey question 26. next asked respondents what percentage of the time do they maintain contact with the DCAA auditor during his audit. The frequency distribution of replies to this question was as follows:

0%	20%	40%	50%	60%	80%	100%
44	28	4	13	4	3	9
(44.9%)	(26.7%)	(3.8%)	(12.4%)	(3.8%)	(2.9%)	(8.6%)

Over 40 percent of the respondents indicated that no continuing contact was effected, while slightly over two-thirds indicated 20 percent or less of the time they were in continuing contact with the auditor. Aggregation of the choices into three groups and calculation of internal group response shows the following:

TABLE 32.

PERCENTAGE COMPARISON OF GROUP RESPONSE TO QUESTION 26.

	0% ≤ 30%	31% ≤ 70%	71% ≤ 100%
EFDE	88.5	11.5	0
AROICC	64.6	25.0	10.4
RSCE	56.2	21.9	21.9

Part A. to this question then asks if the respondents feel this type of contact is, or would be helpful. An overwhelming majority of 86 percent say yes, while 12 percent say no and two percent say maybe. All three groups agreed strongly on this point.

3. Contract Administration/Contract Audit Interface Problem

To determine if respondents felt that a contract administration/contract audit interface problem existed, survey question 28. consisting of four parts was asked. The main question asks if the persons surveyed believe that a contract administration/contract audit interface problem exists. Tabulations show that 57 or 55.9% replied yes while 45 or 44.1% replied no. By group, 66.7% of the EFDE's believe there is a problem and 59.1% of AROICC's believe there is a problem, while only 48.5% of RSCE's believe so. Part A then asks, if yes, what do the respondents conclude are the basic causes of this problem. Of the replies, 38.7% believed that the lack of communication between the auditor and contract administration was the basic cause

of the problem. Twenty-nine percent believed the auditor's lack of construction knowledge was the basic problem cause, while 25.8% felt that the fact that the auditor does not know the needs of the negotiator was the cause. Part B asks again, if yes, do you believe this problem adversely effects the CCCO audit results. Of the 57 respondents who answered, 75.4% replied yes, while 24.6% replied no. When these 75.4% were then asked by part C to give in their opinion the best solution to the interface problem, two main suggestions were put forward. Approximately 58.6% suggested better channels of communication and liaison, while 29.6% suggested initiation of, or more mutual education.

IV. CONCLUSIONS

Chapter III presents the results of a questionnaire circulated regarding the current state of CCCO audits in Navy construction contract administration. Chapter IV. summarizes into conclusions those results judged significant from this preceding chapter. From these conclusions, it becomes possible to identify those actions NAVFAC contract administrators may take at the beginning of the CCCO audit process to produce more usable audit results. This identification fulfills the aim of the first thesis objective.

For cross reference purposes, page numbers of the applicable analysis and discussion in Chapter III. have been included. These conclusions have been grouped into the same six sub-areas of investigation used throughout this study.

A. BACKGROUND AND EXPERIENCE LEVELS

The questionnaire results indicate a difference in both background and audit experience levels between the three stratification groups identified within the total population, ie., the EFD/OICC engineers (EFDE's), the ROICC-AROICC's (AROICC's), and the ROICC supervisory civil engineers (RSCE's). These differences are found in the areas of position length, contract experience (both government and private contractor), accounting background and the number of audits experienced.

The average dollar amount per CCCO audit is estimated at approximately $375,000. The total number of audits per year in NAVFAC is estimated in the range of 100 to 166 with a total value of $37 million to $63 million. As a percentage of the $50 billion of pricing proposals DCAA audits per year (see Appendix G), $63 million amounts to a little over one-tenth of one percent (.00126).

Table 33, Group Comparison of Background and Experience, on page 77, summarizes the differences from which the above conclusions were reached. This table was compiled from the analysis contained in Sections A. and B. of Chapter III. The CCCO audit numbers and average amounts were taken from the calculations performed on page 41.

B. PUBLISHED GUIDANCE

Review of the results presented on page 43 show that no agreement exists in the NAVFAC Construction Contract Administration community on where the most specific guidance for obtaining CCCO audits is to be found.

Eighty percent of the survey respondents feel they are familiar with their EFD/OICC's administrative procedures for obtaining CCCO audits, although approximately 60% of these respondents described the main steps of these procedures in as general terms as possible as discussed on page 44. It can not be determined, however, if these general descriptions resulted from the amount of space provided for answering the question, the respondent's

TABLE 33.

GROUP COMPARISON OF BACKGROUND AND EXPERIENCE

	EFDE			AROICC			RSCE		
	W/EXP	W/O EXP	TOTAL	W/EXP	W/O EXP	TOTAL	W/EXP	W/O EXP	TOTAL
POPULATION	52	8	60	75	81	156	52	46	98
RESPONSE	31	5	36	48	52	100	34	30	64
POSITION LENGTH*	53.0	39.3	51.7	16.5	11.4	13.9	44.3	42.8	43.8
GOVT. CONST. EXP.*	121.8	42.3	114.1	30.2	20.6	25.5	110.2	76.1	99.2
CONST. CONST. EXP.+	9	1	10	6	2	8	11	6	17
ACC. BKGRD.+	6	2	8	21	12	33	3	2	5
CCA[1] SYS.+	14	2	16	24	7	31	16	4	20
AUDIT COURSES+	3	0	3	1	4	5	3	2	5
AVE. AUDITS/YR.	3.32	-	-	2.60	-	-	2.12	-	-
MEAN AUDIT AMOUNTS	$443K	-	-	$402K	-	-	$219K	-	-

[1] CCA - Contractor Cost Accounting

* Average Months

+ Number of Respondents

desire to be brief, or a truly limited level of general knowledge.

The conclusion that these administrative procedures provide sufficient specific direction was not clear, although the contention that no changes were needed was clear as detailed on page 44.

No one publication is seen as the information reference where more information on CCCO audits may be found as discussed on page 45. Accordingly, while additional informational references may not be needed, the need for one central information source (such as NAVFAC) to tie all available information together on a general basis is strongly indicated.

C. PERSONAL CONSULTATION GUIDANCE

Because of the present and probably continuing differences between EFD's and OICC's in designating the handling of CCCO audits, no conclusion on who should be the organizations' "expert" was found. It is strongly concluded, however, that whomever this person is, he should have special education or training in CCCO audits to enable him to perform this duty properly as discussed on page 48.

Due to the fact that differences presently exist between the EFD's and OICC's as to who should coordinate the aspects of a various audit with DCAA, no conclusions are advanced in this area.

D. AUDIT RESULTS AND TIMELINESS

Opinion of current audit report results is mixed with no real indication of the overall accuracy to be found as discussed on page 53. The conclusion, however, that most of the CCCO audit results require rework because of more than a minor discrepancy is well supported in discussion on page 54.

On the average, audit reports are received approximately seven weeks at EFD/OICC's after they are requested and eight weeks at ROICC offices. Negotiations are then usually scheduled in an additional two or three weeks giving a total average range of nine to eleven weeks for change order negotiations to begin after an audit has been requested. If the audit must be reworked, an average delay of a little more than three weeks becomes involved. The shortest possible time frame with rework would, on the average, appear to be ten weeks (seven weeks to receive plus three weeks to rework). The longest possible time on the average would be 14 weeks (eight weeks to receive, three weeks to rework and three weeks to prepare and initiate negotiations. Some point in this ten to fourteen week interval, say eleven or twelve weeks, seems like the most probable average time from request to initiation of negotiations with rework involved. See the analysis on pages 57-60 for this time discussion.

E. PROPOSAL BREAKDOWN AND OVERHEAD EVALUATION

Construction contract administration personnel usually experience problems of receiving an inadequate initial change order proposal breakdown from the contractor when an audit is required as shown on page 62.

The most difficult areas to receive adequate itemization of costs, by order of difficulty, are home office overhead costs, field office overhead costs, equipment costs, labor costs and material costs. Respondents also indicate that auditors experience the same type of problem frequently in not being provided free access to contract books, records, etc.

When asked to rate the most difficult cost areas of a contractor's proposal to evaluate, construction contract personnel rated home office overhead and field office overhead as most difficult in that order. Next followed labor costs, equipment costs and then material costs.

Because of the differences in the contractor's and the government's definition of overhead, as well as the question of allowability of certain items under ASPR, contractor's overhead proposals frequently provide evaluation problems for contract administrators. Although the conlcusion that special procedures are needed to evaluate the proposals of government contract experienced contractors is indicated, no real agreement on the means to do this arose as shown in the results on pages 66-67.

F. INTERRELATIONSHIPS WITH DCAA

Construction contract administration personnel are not familiar with DCAA and its role in auditing the various types of government contracts on a general knowledge basis. They are usually knowledgeable to some degree with regard to construction only.

DCAA auditors in general are not very knowledgeable of the operations of construction contractors according to contract administration personnel. The basis for both these conclusions is discussed on pages 69 and 70.

Regular prior contact between the contract administrators and auditors is not now standard procedure. As indicated on page 70, even though two-thirds of the respondents initiate prior contact at times, more than one-half of these people do it less than half the time.

Continuing contact between contract administrators and auditors during the completion of an audit is not now standard procedure, although an overwhelming majority of respondents believe such contact would be quite helpful as discussed on page 73.

A significant contract administration/contract audit interface problem does exist and its existance does adversely effect current CCCO audit results. As indicated in the results discussion on pages 73 and 74, the major causes of this interface problem are seen as lack of mutual communication and the auditors lack of construction contract background.

V. RECOMMENDATIONS

The primary purpose of Chapter V. is to satisfy the second thesis objective. This objective concerns making known to NAVFAC managers in policy-making positions those facilitating actions that may be taken at the beginning of the CCCO audit process. The formulation of these recommendations has evolved out of consideration of the more significant conclusions reached in Chapter IV. The following five recommendations summarize the current actions the author believes are needed in the CCCO audit area.

A. BACKGROUND AND EXPERIENCE LEVEL DIFFERENCES

The differences in the group background and experience levels of the EFD/OICC engineers, ROICC-AROICC's and ROICC supervisory engineers should be recognized by decision-makers formulating CCCO audit policy. This recognition should ensure that due consideration be given the implications of these differences in the design and implementation of control systems used by contract administration personnel for obtaining DCAA audits. For example, the decision-maker who is about to sign a new instruction on change orders including procedures under TIN should insure that sufficient information is included to allow for use by the first time audit action designee. Direction as to the

requirements of ASPR or P-68 are not much help without the inclusion of explanatory material or the indication and location of informational references. Although the inclusion of such material may seem redundant to EFD/OICC engineers, it could be extremely useful to ROICC office personnel with minimal experience. The development and source of the explanatory information must be passed along to the parties that require it the most. Uninitiated contract administrators should not be placed in the position of "inventing the wheel again" as often happens now.

B. THE PREPARATION OF A COMPREHENSIVE INFORMATIONAL REFERENCE

The gathering of all available information on CCCO audits into one informational reference on a general basis is recommended based upon two conclusions from this study.

The first conclusion is that no one publication or reference is agreed upon by contract administrators as a resource for obtaining additional information on CCCO audits. The resource mentioned most often on page 45 is ASPR, a document of great length and complexity, whose use is fraught with the possibilities of misinterpretation for field level contract administrators. Interpretation of Navy construction contract requirements from ASPR rightly belongs at NAVFAC headquarters.

The second conclusion leading to this recommendation is that an overwhelming percentage (73.8%) of respondents believe one informational reference combining the scattered

CCCO contents of other publications and references is needed as noted on page 46.

Two alternative courses of action appear most feasible for implementing this recommendation. The first course would be the compilation and issuance of a guidance publication solely on CCCO audits by NAVFAC. The second course of action would be to include the compilation of CCCO audit information into an existing publication or reference, such as The Guide to Construction Contract Negotiations, CECOS 203/74 (formerly P-79). This second alternative offers the advantages of combining the specifics of a sub-area of negotiating procedures with the wealth of negotiating information currently contained in CECOS 203/74.

If CECOS 203/74 is expanded to include this information, strong consideration should be given to upgrading and widely disseminating this reference. Review of the various survey results shows the mention of P-79 or CECOS 203/74 to be so few as to be nearly non-existent. This fact would suggest that numerous contract administrators are not even aware of the existance of this useful document.

C. THE IMPLEMENTATION OF AUDIT TRAINING AND EDUCATION

It is recommended that whoever is designated as the CCCO audit "expert" by each EFD/OICC should possess sufficient training and education in accounting, auditing and the procedures of DCAA audits to be able to provide complete detailed guidance to inexperienced contract administration

personnel. The background results summarized in Table 33. on page 77 shows that such expertise does not now exist among EFD construction division engineers or in the ROICC office. Lack of these background characteristics is also suspected in the EFD/OICC contracts division personnel.

Personal interviews with the U. S. Army Corps of Engineers (COE) contract auditors shows the importance of having such trained and experienced people. COE has its own organizational contract auditors to audit TIN proposals of contractors under its non-military civil works type projects. These experienced auditors are then in the position to interface between the COE field contract administrators and the DCAA auditors on military construction contracts where DCAA must be used to perform the CCCO audit. This interface includes explanation of DCAA audit actions to field contract administrators, and exploration of the needs of contract administration personnel and the peculiarities and differences of construction contracts and contractors to the DCAA auditors. These COE auditors felt that this interface function was very important to the achievement of complete and usable audit results in addition to significantly saving the time of field contract administration personnel.

Although the CCCO audit "expert" in NAVFAC organizations may not be in the position to obtain actual contract audit experience, he should obtain education or training in

government contract audits. Several items would be recommended, such as the development of a working knowledge of DCAA's organization and audit procedures including possession and review of the audit manual and direct contact and feedback communication with DCAA audit supervisors in different regions. Attendance at courses on government contracts audits such as COE's two week Contract Audit Training (CECAT) or Procurement Associates' one week Government Contract Audits is also recommended.

D. INCREASE CONTRACTOR AWARENESS OF INFORMATION REQUIREMENTS

It is recommended that contractors be made more aware of their obligation to provide fully itemized change order proposals and of the government's definitions of overhead under ASPR. Presently, the government's rights in this area are adequately covered under clauses 41 and 51 in the General Provisions (Construction Contract).[5] Clause 41 requires a contractor to "furnish a price breakdown, itemized as required by the contracting officer" while clause 51 allows the government the right to "examine all books, records, documents and other data of the contractor related to the negotiation, pricing or performance" of any change or modification. However, no guidance with definitions

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[5] Naval Facilities Engineering Command. General Provisions (Construction Contract), January 1977.

of overhead items allowable under ASPR is known to be included in the contract documents.

Problems arise because the above clauses are included in the "boilerplate" or "fine print" as some contractors refer to it. Since no guidance is provided on allowable overhead items, contractors are frequently unaware of the detail needed until a proposal is audited.

This problem could be handled in alternative ways. One method would be to cover this area of proposal breakdown and overhead definitions in detail at the pre-construction conference, even providing the contractor with short written guidelines in each area. The other method would be to discuss the proposal breakdown and overhead definitions at a prior meeting concerning each change order proposal submission. Again, pre-written guidelines could be given to the contractor for his use and reference.

E. REQUIRE DIRECT COMMUNICATION WITH DCAA AUDITORS

The requirement that contract administrators initiate direct lines of communication with the DCAA auditor both before and during the completion of an audit and during negotiations is recommended. This communication would serve to overcome the lack of mutual understanding between both contract administrators and auditors concerning each others objectives and procedures. This recommendation is intended to overcome the psychological barrier that might arise in unknowledgeable contract administrators at the thought of

having an auditor become familiar with their operations. Contract administrators should recognize that a contract auditor is a valuable part of the government contract administration team and not an internal auditor concerned with evaluating the efficiency of operations of contract administrators.

Once this barrier is removed, a free interchange could insure that contract administrators understand what the auditor will be doing for them, and this will enable them to help the auditor by directing him to questionable areas of the contractors proposal. In addition, because the auditor may not be familiar with construction contracts or contractors, the auditor will be provided with a knowledgeable contact to address his questions to.

Because CCCO audits comprise such a small dollar percentage of the yearly DCAA pricing proposal workload, it does not appear economical for DCAA to provide auditors with specific construction contract educations or backgrounds. However, this possibility could, and has been investigated in areas of concentrated Navy construction contract activity.

Further, whenever audit questions or problems are expected during negotiations, the auditor should be invited to attend to explain any questionable aspects of the audit, and to provide the information contained in his working papers. DCAA is specifically tasked with providing the auditor's presence at negotiations when necessary and is usually more than willing to make him available for this use.

APPENDIX A

ACRONYMNS AND DEFINITIONS

1. Acronymns

The following acronymns are used in various places throughout the text and have been summarized below to provide a location for central reference purposes.

A/E - Architect - Engineer

ASPA - Armed Services Procurement Act of 1947 as amended, 10 USC 2301-2314

ASPR - Armed Services Procurement Regulation

AROICC - Assistant Resident Officer in Charge of Construction

CAM - DCAA Contract Audit Manual, DCAAM 7640.1

CCCO - Construction Contract Change Order

CEC - U. S. Navy Civil Engineer Corps

CECOS - Naval School, Civil Engineer Corps Officers

COE - U. S. Army Corps of Engineers

COR - Change Order Request

DCAA - Defense Contract Audit Agency

DD Form 633 - Department of Defense Contract Pricing Proposal

DLA - Defense Logistics Agency formally Defense Supply Agency (DSA)

DOD - Department of Defense

DPC - Defense Procurement Circulars

EFD/OICC - NAVFAC Engineering Field Division - Officer in Charge of Construction Offices

GAO - General Accounting Office

GSA - General Services Administration

NAVFAC - Naval Facilities Engineering Command

NAVFAC P-68 - *Contracting Manual*

NPD - Navy Procurement Directives

NTP - Notice to proceed

OIC - Officer in Charge of other than construction contracts (i.e. A/E)

OICC - Officer in Charge of Construction

P. L. 87-653- Public Law 87-653, The Truth in Negotiations Act

P. L. 90-512- 1968 amendment to P. L. 87-653 by Congress to include provisions for access to records and audits by the Government in all contracts for a period of three years after final payment.

RFP - Request for Proposal

RSCE - ROICC Office Supervisory Civil Engineer

TIN - Truth in Negotiations Act - P. L. 87-653

2. Definitions

In order to insure a common understanding with respect to the analysis and discussion of CCCO audits in the following chapters, a list of definitions has been developed. This list is presented with the intention of establishing

a clear understanding of the meaning and intent of the defined terms for use in this study.

Change Order Negotiations - a decision-making process whereby agreement by both parties on the modification of the original basic contract is reached based on a mutual understanding of the obligations and rights of both the Government and contractor. Negotiations are characterized by presentation of the position of the participating parties which may be widely divergent or closely aligned and the exertion of pressures, influences, persuasion, and compromise to meet on agreeable common ground.

Construction - The erection, installation or assembly of a new facility; the addition, expansion, extension, alteration, conversion or replacement of an existing facility; or the relocation of a facility from one installation to another. Also included are equipment installed and made a part of such facilities, and related site preparation, excavation, filling and landscaping, or other land improvements.

Construction Contract Change Order - The legal instrument by which both parties to a construction contract modify in any way the rights or obligations established by the basic contract.

Construction Contract Modifications - See Construction Contract Change Order.

Construction Project - A single undertaking involving construction applicable to one or more real property facilities that will include all construction work, land

acquisition, and items of installed equipment necessary to accomplish a specific purpose and produce a complete and usable real property facility or a complete and usable improvement to a real property facility.

Contract Administration - All the actions that the Government must take with respect to interfacing with a contractor after the contract has been awarded until the material, service or facility has been delivered, accepted and paid for and the contract officially closed out.

Contract Audit - To provide those responsible for procurement and contract administration with financial information and advise on proposed or existing contracts and contractors to include examination and review of contractors' and subcontractors' general business practices and procedures, systems of internal control, accounting and accounts, costing, records documents and other evidence as appropriate to the situation and proposal being examined.[6]

"Contracting Officer" - The Commander of the Naval Facilities Engineering Command has been designated as the "contracting officer" for all NAVFAC contracts by the Secretary of the Navy.

Cost of Pricing Data - Interpreted by the courts to mean cost and pricing data, "consists of all facts existing up to the time of agreement on a price which prudent buyers

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[6] Department of Defense Directive number 5105.36, Defense Contract Audit Agency, p. 3, June 9, 1965.

and sellers reasonably would expect to have a significant effect on price negotiations."[7] Cost or pricing data is concerned with disclosable data with which "prudent buyers and sellers" would be concerned in pricing a contract and is not limited to historical information. The definition included judgments, projections and estimates.

Naval Activity - The unit of the Naval Establishment, of distinct identity, established ashore under an officer in command or in charge.

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[7] Department of Defense, Armed Services Procurement Regulation, par. 3-807.3(h), 1976 edition.

APPENDIX B

CCCO AUDIT QUESTIONNAIRE

The questionnaire distributed in the survey totaled five pages. Page one contained the introductory comments, pages two through four contained CCCO audit questions, and page five contained background questions. The introductory page follows:

TO: ROICC's (Primary Duty), AROICC's (Primary Duty)
EFD or OICC Construction Division Engineers, and
ROICC Supervisory Civil Engineers

SUBJ: Research Assistance; request for

ENCL: (1) Construction Contract Change Order Audit Questionnaire

Your support is requested in the completion of enclosure (1) because of the knowledge and experience you have gained in the construction contract administration field. The purpose of the enclosed questionnaire is to collect data in support of a research effort being sponsored by the Assistant Commander for Construction, Naval Facilities Engineering Command.

Because of the limited number of questionnaires sent out, the accuracy and validity of the research is dependent on your cooperation in completing and returning the questionnaire within 10 days. It is also dependent on your unbiased answers. For this reason, explanatory information

concerning the research is not included in this memorandum. The questionnaire has been designed with briefness in mind and is intended to require only a few minutes of your time.

It is requested that the individual completing this questionnaire answer all questions based on his own opinions and experiences. This survey does not attempt to solicit the views of any specific organization or office. Please answer all questions that you feel qualified to answer. For those you do not feel you can adequately answer, write DNR (do not recall), N/A (not applicable), or N.O. (no opinion). Comment or elaboration on any of your answers is encouraged and may be written in the margin or on the back of the questionnaire sheets. All answers will be held in strictest confidence with any references to answers being non-attributive.

Your assistance in completing and returning this questionnaire is most appreciated. Thank you for your time and effort.

1. Do you have any job experience with respect to construction contract change order (CCCO) audits? YES __ NO __
   If no, please skip to the background questions at the end of this questionnaire.

2. How many CCCO audits have you had any experience with in the following fiscal years?
   FY 77 + 76T ___ FY 76 ___ FY 75 ___ FY 74 ___
   (1st 9 mos.)
   A. Of these, for those audits for which you have been the primary action designee, please list below the approximate dollar amount for each separate audit, either prime contractor or subcontractor. Please indicate after the dollar amount whether the proposal was for an additive or deductive change order.

	FY 77 + 76T	FY 76	FY 75	FY 74
PRIME CONTRACTORS				
SUBCONTRACTORS				

B. If any of the audits you listed in 2A were requested by the contractor rather than required (The Truth in Negotiations Act requires audits for any negotiated contract modification exceeding $100,000), please relist these approximate dollar amounts below along with the reason the audit was requested.

FY	AMOUNT	REASON REQUESTED

3. Where do you believe the most specific guidance for obtaining CCCO audits is to be found?
   ASPR ____ P-68 ____ EFD or OICC Instruction ___
   OTHER (Please specify) ________________

4. Off-hand, are you familiar with your EFD or OICC's administrative procedures for obtaining construction contract change order audits?
   YES ______ NO _______
   A. If yes, please briefly describe what you believe are the main procedural steps.

5. How do you rate these administrative procedures with respect to the specifics of the direction provided?
   VERY SPECIFIC ___ SPECIFIC ___ SPECIFIC IN MAJOR AREAS ___ GNERAL ___ VAGUE ___

6. Do you believe any changes in these administrative procedures are needed? YES ___ NO ___
   If yes, please briefly list these changes.

7. How would you rate the initial audit results you now receive by using these administrative procedures with regard to accurately and fairly representing what you believe to be the government position?
   COMPLETELY ACCURATE ___ MOSTLY ACCURATE ___ MAJOR POINTS ACCURATE ___ MARGINALLY ACCURATE ___ NOT ACCURATE ___

8. How long does it usually take from the time you request an audit until the time you receive a copy of the audit report in the mail? (Please specify to the nearest week).

9. How long does it usually take from the time you receive an audit report until the time negotiations are convened? (Please specify to the nearest week).

10. From your experience, what percentage of the initial audit reports you receive have you been required to rectify before using because of more than a minor discrepancy? (Please circle the appropriate percentage).
    0% 20% 40% 50% 60% 80% 100%

A. If you did not say 0%, what do you believe are usually the most frequent reasons for rectification rework?

B. Please list any recommendations you may have to reduce this rework problem.

11. From your experience, what percentage of the time has the need to rectify initial audit results ever caused a lengthening in the time period that elapsed before negotiations could be scheduled and held?

0% 20% 40% 50% 60% 80% 100%

A. For those CCCO audits for which you have been the primary action designee, please list the number of times this has happened and the time periods involved.

0-2 wks 2-4 wks 4-8 wks 8-12 wks 12 wks + (Please Specify)

12. What percentage of the time have you negotiated a change order disregarding some major aspect of the audit report because you felt it did not accurately represent the government's position?

0% 20% 40% 50% 60% 80% 100%

13. What percentage of the time do you encounter problems with receiving an adequate initial change order proposal breakdown from the contractor when an audit is required?

0% 20% 40% 50% 60% 80% 100%

A. If you did not say 0%, which of the following areas of the proposal do contractors seem the most reluctant to provide an adequate breakdown for?

LABOR COSTS ___ MATERIAL COSTS ___ EQUIPMENT COSTS ___
FIELD OVERHEAD COSTS ___ HOME OFFICE OVERHEAD COSTS ___

14. Which areas of a contractor's change order proposal do you find the most difficult to evaluate (please rank in order of most difficulty).

LABOR COSTS ___ MATERIAL COSTS ___ EQUIPMENT COSTS ___
FIELD OVERHEAD COSTS ___ HOME OFFICE OVERHEAD COSTS ___

15. What percentage of the time do you experience problems specifically with the overhead pricing section of a contractors change order proposal?

0% 20% 40% 50% 60% 80% 100%

A. If you did not say 0%, what do you believe are the major causes of this overhead evaluation problem?

16. Do you feel that some contractors require increased attention or special handling of their overhead proposals because of their extensive government contract experience?

YES ____ NO ____

If yes, what special procedures do you recommend?

17. To what publications or references do you go to find out more information about CCCO audits?

18. Do you feel there is a need for any additional informational references in the CCCO audit area?
YES ____ NO ____
A. If yes, list what you believe is additionally required.

19. Do you feel there is a need for one informational reference to tie all available information together on a general basis? YES ____ NO ____

20. On a permanent basis, who (position & organization) do you feel should be the most knowledgeable person on CCCO audits? ______________________
A. Should the person in this position have any extra or special education or training in CCCO audits?
YES ____ NO ____
B. If yes, what do you suggest?

21. Who do you now ask (position & organization) if you want personal guidance or information on CCCO audits?
____
A. What percentage of the time is this person able to answer questions to your satisfaction?
0% 20% 40% 50% 60% 80% 100%

22. How familiar are you with the Defense Contract Audit Agency (DCAA) and its role in auditing the different types of government contracts?
VERY KNOWLEDGEABLE ____ KNOWLEDGEABLE IN MOST AREAS ____
GENERALLY KNOWLEDGEABLE ____ KNOWLEDGEABLE IN CONSTRUCTION ONLY ____ SOME KNOWLEDGE IN CONSTRUCTION ____

23. Who (position & organization) do you feel should be the primary action designee for coordinating all aspects of a particular CCCO audit with DCAA? ____________________

24. Who (position & organization) is now the primary action designee for handling CCCO audits in your office?
____

25. Have you ever made contact with the DCAA auditor before his audit to discuss various aspects of the contractors proposal? YES ____ NO ____
A. If yes, what percentage of the time do you do this?
0% 20% 40% 50% 60% 80% 100%
B. If yes, please comment on how helpful this has been.

26. What percentage of the time do you maintain contact with the DCAA auditor during his audit?
0% 20% 40% 50% 60% 80% 100%
A. Do you feel this type of contact is, or would be helpful? YES ____ NO ____

27. To your knowledge, has the auditor ever encountered problems with the contractor not cooperating in providing free acess to contract books, records, etc.?
A. If yes, what percentage of the time does this happen?
0% 20% 40% 50% 60% 80% 100%

28. Do you believe that a contract administration/contract audit interface problem exists? YES ____ NO ____
A. If yes, what do you conclude are the basic causes of this problem?
B. If yes, do you believe this problem adversely effects the CCCO audit results? YES ____ NO ____
C. If yes, in your opinion how best can the interface problem be solved?

29. From your experience, how do you rate the contract auditors knowledge of the operations of construction contractors?
VERY KNOWLEDGEABLE ___ KNOWLEDGEABLE IN MOST AREAS ____
GEN. KNOWLEDGEABLE ___ KNOWLEDGEABLE IN SOME AREAS ____
KNOWLEDGEABLE IN FEW AREAS ____

BACKGROUND QUESTIONS

1. Which EFD or OICC does your office report to?

2. Which office do you work in?
EFD or OICC Construction Division ____ ROICC ____
OTHER ____ (Please Specify)

3. Does your office routinely handle construction contracts of a size large enough to generate change orders (100,000 +) which will require CCCO audits?
YES ____ NO ____

4. What is your position?

5. How long have you held this position? (In months)

6. What is your rank (Military or GS)?

7. How many months of construction contract experience do you have? GOVERNMENT ____ CONTRACTOR ____

8. Do you have any accounting background?
YES ____ NO ____
A. If yes, please specify.

9. Do you have any knowledge of construction contractor's accounting systems? YES ____ NO ____

10. Have you ever taken or attended a course on auditing or government contract audits? YES ____ NO ____
A. If yes, please specify.

Thank you for your assistance in this research effort.

Please send this questionnaire to the following address:

LT Deane E. Leidholt, CEC, USN
SMC #1151, NPS
Monterey, California 93940

APPENDIX C

TABULATION OF CCCO AUDIT QUESTIONNAIRE RESPONSE

The tabulation of questionnaire results is not presented in the same order as the questions were asked in Appendix B; rather, they are presented in the same order as discussed in Chapter III, Survey Results and Analysis. The tabulation of results is accomplished by two methods, one for the population as a whole and one by the three group statification of the population. These numbers are presented in the following formats: 113/31 - 48 - 34 or 113 (31 - 48 - 34). The first number (113) indicates the response of the population as a whole. The first number below or in parenthesis indicates EFDE response, the second number, AROICC response, and the third number, RSCE response.

A. SURVEY RESPONSE

1. Do you have any job experience with respect to Construction Contract Change Order (CCCO) Audits?
   YES 113 NO 87
   31 - 48 - 34 5 - 52 - 30

B. POPULATION CHARACTERISTICS — BACKGROUND AND EXPERIENCE LEVELS

1. Which EFD or OICC does your office report to?

2. Which office do you work in?
   EFD or OICC Construction Division __ ROICC ___
   OTHER ___ (Please Specify)

3. Does your office routinely handle construction contracts of a size large enough to generate change orders ($100,000 +) which will require CCCO audits?
   YES 143 NO 38
   33 - 73 - 37 2 - 21 - 15

4. What is your position?
EFDE's 36 ROICC - AROICC's 100
RSCE's 64
WITH EXPERIENCE 31 - 48 - 34
WITHOUT EXPERIENCE 5 - 52 - 30

5. How long have you held this position? (In months)
51.7 - 13.9 - 43.8

WITH EXPERIENCE	WITHOUT EXPERIENCE
53.0 - 16.5 - 44.3	39.3 - 11.4 - 42.8

6. What is your rank (Military or GS)?

EFDE's

	GS-12	GS-14	GS-13	GS-12
WITH CCCO EXP.	5	5	6	14
WITHOUT CCCO EXP.	0	0	2	2
TOTAL	5	5	8	16

ROICC - AROICC's

	O-5	O-4	O-3	O-2	O-1	TOTAL
WITH CCCO EXP.	9	11	17	7	4	48
WITHOUT CCCO EXP.	5	8	21	4	9	47
TOTAL	14	19	38	11	13	95

RSCE's

	GS-13	GS-12	GS-11	GS-9	TOTAL
WITH CCCO EXP.	13	22	1	0	36
WITHOUT CCCO EXP.	2	13	1	1	17
TOTAL	15	35	2	1	53

7. How many months of construction contract experience do you have?

GOVERNMENT 114.1 - 25.5 - 75.4

WITH EXPERIENCE	WITHOUT EXPERIENCE
121.8 - 30.2 - 79.5	42.3 - 20.6 - 61.9

	CONTRACTOR NUMBER/POPULATION	SUMMARY OF MONTHS OF EXPERIENCE
EFDE		
WITH CCCO EXP.	9/29	10, 144, 24, 24, 36, 24, 6, 8, 36
WITHOUT CCCO EXP.	1/4	300
TOTAL	10/33	
AROICC		
WITH CCCO EXP.	6/48	12, 14, 12, 24, 6, 12
WITHOUT CCCO EXP.	2/46	60, 24
TOTAL	8/94	

RSCE		34, 48, 48, 3, 36, 24, 252, 30,
WITH CCCO EXP.	11/36 - - -	36, 30, 12
WITHOUT CCCO EXP.	6/17 - - -	90, 180, 60, 204, 120, 146
TOTAL	17,53	

8. Do you have any accounting background?
YES 46 NO 136

	EFDE's		AROICC's		RSCE's	
	YES	NO	YES	NO	YES	NO
WITH CCCO EXP.	6	23	21	27	3	33
WITHOUT EXP.	2	3	12	35	2	15
TOTAL	8	26	33	62	5	48

A. If yes, please specify.

		WITH EXPERIENCE	
	EFDE's	AROICC's	RSCE's
ACCOUNT. COURSE	4	3	1
ACCOUNT. EXP.	1	10	0
M. S. DEGREE	0	1	0
NOT SPECIFIED	1	7	2
TOTAL	6	21	3

		WITHOUT EXPERIENCE	
	EFDE's	AROICC's	RSCE's
ACCOUNT. COURSE	1	6	1
ACCOUNT. EXP.	1	5	0
M. S. DEGREE	0	0	1
NOT SPECIFIED	0	1	1
TOTAL	2	12	3

9. Do you have any knowledge of construction contractor's accounting systems?
YES 67 NO 116

	EFDE's		AROICC's		RSCE's	
	YES	NO	YES	NO	YES	NO
WITH CCCO EXP.	14	16	24	24	16	20
WITHOUT EXP.	2	2	7	41	4	13
TOTAL	16	18	31	65	20	33

A. If yes, please specify.

		WITH EXPERIENCE	
	EFDE's	AROICC's	RSCE's
AS CONTRACTOR EMPLOYEES	4	1	0
OJT EXPERIENCE	0	11	10
EDUCATIONAL	2	6	0
NOT SPECIFIED	7	6	6
TOTAL	13	24	16

		WITHOUT EXPERIENCE	
	EFDE's	AROICC's	RSCE's
AS CONTRACTOR EMPLOYEES	1	1	2
OJT EXPERIENCE	0	1	1
EDUCATIONAL	0	5	0
NOT SPECIFIED	1	0	1
TOTAL	2	7	4

10. Have you ever taken or attended a course on auditing or government audits? YES 14 NO 169

	EFDE's		AROICC's		RSCE's	
	YES	NO	YES	NO	YES	NO
WITH CCCO EXP.	3	27	1	47	3	33
WITHOUT EXP.	0	4	5	43	2	15
TOTAL	3	31	6	90	5	48

A. If yes, please specify.

		WITH EXPERIENCE	
	EFDE's	AROICC's	RSCE's
PROCUREMENT ASSOC. INC.			
GOVT. CONT. AUDITING	0	1	0
FED. PUBS. INC.			
GOVT. CONST. CONT.	1	0	0
CHANGES	0	0	0
C.A.S.	0	0	2
MASTER'S PROGRAM			
AUDITING	0	0	1
NOT SPECIFIED	2	0	0
	3	1	3

		WITHOUT EXPERIENCE	
	EFDE's	AROICC's	RSCE's
PROCUREMENT ASSOC. INC.			
Gov't. Cont. Auditing	0	0	0
FED. PUBS. INC.			
Gov't. Const. Cont.	0	0	0
Changes	0	1	0
C.A.S.	0	0	1
MASTER's PROGRAM			
Auditing	0	4	1
Not Specified	0	0	0
	0	5	2

2. How many CCCO audits have you had any experience with in the following fiscal years?

FY 77 + 76T ____ (1st 9 mos.) FY 76 ___ FY 75 ___ FY 74 ___

	n	$\bar{x}$	s
EFDE	34	3.32	2.85
AROICC	43	2.60	2.55
RSCE	36	2.12	2.38

INSUFFICIENT RESPONSE
FY 76, FY 75, FY 74

A. Of these, for those audits for which you have been the primary action designee, please list below the approximate dollar amount for each separate audit, either prime contractor or subcontractor. Please indicate after the dollar amount whether the proposal was for an additive or deductive change order.

PRIME CONTRACTORS FY 77 + 76T FY 76 FY 75 FY 74

PRIME CONTRACTORS FY 77 + 76T

	n	$\bar{x}$	s
EFDE	15	$443,207	$632,090
AROICC	72	$402,306	$675,535
RSCE	16	$219,563	$132,074

(INSUFFICIENT RESPONSE FY 76, FY 75, FY 74)

SUBCONTRACTORS

(INSUFFICIENT RESPONSE ALL FISCAL YEARS)

B. If any of the audits you listed in 2A were requested by the contractor rather than required (The Truth in Negotiations Act requires audits for any negotiated contract modification exceeding $100,000), please relist these approximate dollar amounts below along with the reason the audit was requested.

FY	AMOUNT	REASON REQUESTED

(INSUFFICIENT RESPONSE)

C. PUBLISHED GUIDANCE

3. Where do you believe the most specific guidance for obtaining CCCO audits is to be found?

ASPR 33	P-68 35	EFD or OICC Instruction 40	Others 4
7-12-14	11-12-12	14-19-7	1-2-1

4. Off-hand, are you familiar with your EFD or OICC's administrative procedures for obtaining Construction Contract Change Order Audits?
YES 90 NO 22
25-36-39 4-11-7

A. If yes, please briefly describe what you believe are the main procedural steps.

	STEPS	TOTAL	BY GROUP
1.	OICC/ROICC requests audit from DCAA.	24	(6-11-7)
2.	Contractor submits proposal on DD-633, OICC/ROICC requests audit from DCAA.	36	(10-13-13)
3.	Contractor submits proposal on DD-633, both ROICC/OICC review and provide comments to auditor, OICC/ROICC requests audit from DCAA.	13	(5-6-2)
4.	Contractor submits proposal on DD-633, ROICC identifies specific areas of concern, OICC/ROICC requests audit from DCAA.	16	(5-6-5)

5. How do you rate these administrative procedures with respect to the specifics of the direction provided?

VERY SPECIFIC	SPECIFIC	SPECIFIC IN MAJOR AREAS	GENERAL	VAGUE
17 (7-7-3)	31 (8-10-13)	11 (4-5-2)	25 (7-11-7)	6 (1-3-2)

6. Do you believe any changes in these administrative procedures are needed? YES 22 NO 67
10-8-5 18-29-20

A. If yes, please briefly list these changes.

	CHANGES	TOTAL	BY GROUP
1.	These administrative procedures should advise ROICC offices to provide a complete list of special proposal items for DCAA to review.	7	(3-3-1)
2.	A revision of DD form 633.	2	(0-2-0)
3.	Formalize audit procurement procedures.	2	(0-2-0)
4.	Others	2	(1-0-1)
5.	No suggestions	9	(6-1-3)

17. To what publications or references do you go to find out more information about CCCO audits?

ASPR	P-68	NONE	EFD INST.	AUDITOR
40	36	15	14	7
9-13-18	9-14-13	4-9-2	4-6-4	3-2-2

FED. PUBS. MATERIAL	P-79	COE NEG. GUIDE	CECOS MATERIAL	COE MOD. MANUAL
3	2	2	1	1
0-2-1	0-1-1	0-0-2	0-1-0	0-0-1

18. Do you feel there is a need for any additional informational references in the CCCO audit area?

YES	51	NO	42
12-24-15		13-13-16	

A. If yes, list what you believe is additionally required.

	REFERENCES	TOTAL	BY GROUP
1.	A reference which gives complete, detailed guidance and information on procedures of and interpretation from results obtaining a DCAA audit.	20	(4-11-5)
2.	A reference which gives complete definitions and descriptions of overheads and allowable overhead items.	6	(3-2-1)
3.	A reference which provides information on DCAA and their audit procedures.	4	(1-2-1)
4.	A manual on construction job cost accounting.	2	(1-1-0)

19. Do you feel there is a need for one informational reference to tie all available information together on a general basis?

YES	76	NO	27
18-35-23		9-8-10	

D. PERSONAL CONSULTATION GUIDANCE

20. On a permanent basis, who (position & organization) do you feel should be the most knowledgeable person on CCCO audits?

CONTRACTS DIVISION-02	ROICC OFFICE	CONSTRUCTION DIVISION-05	AUDITOR	ROICC CONTRACT SPECIALIST
53	25	23	4	2
19-21-13	1-13-11	5-10-8	1-2-1	0-2-0

A. Should the person in this position have any extra or special education or training in CCCO audits? YES 77 (16-36-25) NO 14 (3-6-5)

B. If yes, what do you suggest?

	SUGGESTIONS	TOTAL	BY GROUP
1.	Attendance at courses on DCAA audits.	25	(2-8-15)
2.	Contract Audit Experience.	12	(5-5-2)
3.	Both attendance at courses on DCAA audits and contract audit experience.	9	(2-4-3)
4.	An accounting background.	12	(5-5-2)
5.	Attendance at NAVFAC or CECOS contract administration courses.	5	(2-2-1)
6.	Others	5	(2-2-1)

21. Who do you now ask (position & organization) if you want personal guidance or information on CCCO audits?

CONTRACTS DIVISION-02	CONSTRUCTION DIVISION-05	AUDITOR	ROICC OFFICE	OTHERS
59 22-16-21	21 0-13-8	18 3-11-4	8 2-5-1	4 2-2-0

A. What percentage of the time is this person able to answer questions to your satisfaction?

	0%	20%	40%	50%	60%	80%	100%
02		5 2-2-1	3 2-0-1	6 4-1-1	4 1-1-2	22 9-7-6	16 3-4-9
05		2 0-1-1	1 0-1-0	3 0-2-1	4 0-2-2	7 0-4-3	4 2-1-1
AUDITOR		0 0-0-0	3 0-3-0	3 1-1-1	2 0-2-0	3 0-2-1	4 0-1-3

24. Who (position & organization) is now the primary action designee for handling CCCO audits in your office?

CONTRACTS DIVISION-02	CONSTRUCTION DIVISION-05	ROICC/AROICC RSCE	OTHERS
23 14-3-6	11 5-6-0	66 9-36-21	6 1-3-2

23. Who (position & organization) do you feel should be the primary action designee for coordinating all aspects of a particular CCCO audit with DCAA?

CONTRACTS DIVISION -02	CONSTRUCTION DIVISION-05	ROICC/AROICC RSCE	OTHERS
32	20	42	6
7-11-14	6-12-2	9-17-16	4-2=0

E. RESULTS AND TIMELINESS

7. How would you rate the initial audit results you now receive by using these administrative procedures with regard to accurately and fairly representing what you believe to be the government position?

COMPLETELY ACCURATE	MOSTLY ACCURATE	MAJOR POINTS ACCURATE	MARGINALLY ACCURATE	NOT ACCURATE
3	36	26	29	9
0-2-1	13-9-14	6-11-9	8-11-10	5-4-0

10. From your experience, what percentage of the initial audit reports you receive have you been required to rectify before using because of more than a minor discrepancy?

0%	20%	40%	50%	60%	80%	100%
28	29	4	8	4	9	13
10-7-11	12-7-10	1-2-1	1-5-2	1-3-0	3-2-4	1-5-7

A. If you did not say 0%, what do you believe are usually the most frequent reasons for rectification rework?

REASONS	RESPONDEES	TYPE
1. Questions on contractor's allowed overheads either from the definition of overhead and items which are allowable under ASPR, or from a lack of sufficient breakdown and information on contractors overhead before and after audit.	14	(5-7-2)
2. Auditor able to provide cursory audit effort only.	11	(2-7-2)
3. The auditor does not understand construction contracts or contractors.	9	(1-4-4)
4. The auditor does not understand what is needed by contract administrators for negotiations	5	(2-2-1)
5. The auditor's approved overhead rates are found to be too high.	3	(1-1-1)
6. Others (one each)	8	(1-4-3)

B. Please list any recommendations you may have to reduce this rework problem.

	RECOMMENDATIONS	TOTAL	BY GROUP
1.	Increase direct contact between auditor and field contract administrators.	24	(9-9-6)
2.	Provide construction contract experience to DCAA auditors.	13	(5-5-3)
3.	Clarify ASPR definitions of overhead.	3	(1-2-0)
4.	Revise DD-form 633.	3	(1-1-1)
5.	Provide the auditor with the technical evaluations before the audit is performed.	3	(1-1-1)
6.	Provide specific guidelines to contractors on overhead.	2	(0-2-0)
7.	Others (one each)	5	(1-5-0)

12. What percentage of the time have you negotiated a change order disregarding some major aspect of the audit report because you felt it did not accurately represent the government's position?

0%	20%	40%	50%	60%	80%	100%
33	26	3	10	4	4	18
8-12-13	7-9-10	0-1-2	3-5-2	1-2-1	2-2-0	0-11-7

8. How long does it usually take from the time you request an audit until the time you receive a copy of the audit report in the mail? (Please specify to the nearest week).

WEEKS	3	4	5	6	7	8	9	10	12	13	15	16	17	19	20
EFDE	0	6	9	5	1	3	0	0	2	0	1	1	0	0	0
AROICC	1	5	5	11	4	8	1	3	3	0	1	0	1	0	0
RSCE	0	3	3	8	2	9	0	2	2	1	0	0	1	1	1
TOTAL	1	14	17	24	7	20	1	5	6	1	2	1	2	1	1

EFDE			AROICC			RSCE		
n	$\bar{x}$	s	n	$\bar{x}$	s	n	$\bar{x}$	s
29	6.6	3.2	43	7.3	3.0	33	8.3	4.0

9. How long does it usually take from the time you receive an audit report until the time negotiations are convened? (Please specify to the nearest week).

WEEKS	1	2	3	4	5	6	8	10	TOTAL
EFDE	2	15	4	4	0	0	0	0	25
AROICC	11	12	6	2	2	3	4	0	40
RSCE	7	17	6	1	0	4	0	1	36
TOTAL	20	44	16	7	2	7	4	1	101

EFDE			AROICC			RSCE		
n	$\bar{x}$	s	n	$\bar{x}$	s	n	$\bar{x}$	s
25	2.4	0.9	40	3.0	2.2	36	2.7	1.9

11. From your experience, what percentage of the time has the need to rectify initial audit results ever caused a lengthening in the time period that elapsed before negotiations could be scheduled and held?

0%	20%	40%	50%	60%	80%	100%
39	16	4	7	4	2	12
9-16-14	6-4-6	0-2-2	2-3-2	0-3-1	2-0-0	1-5-6

A. For those CCCO audits for which you have been the primary action designee, please list the number of times this has happened and the time periods involved.

WEEKS	0-2 wks	2-4 wks	4-8 wks	4-12 wks	12 wks
EFDE	3	3	1	0	0
AROICC	9	16	3	1	0
RSCE	1	10	3	0	1
TOTAL	13	29	7	1	1

F. PROPOSAL BREAKDOWN AND OVERHEAD EVALUATION

13. What percentage of the time do you encounter problems with receiving an adequate initial change order proposal breakdown from the contractor when an audit is required?

0%	20%	40%	50%	60%	80%	100%
22	16	8	18	19	8	20
3-13-6	4-4-8	1-3-4	3-9-6	10-7-2	2-4-2	3-11-6

A. If you did not say 0%, which of the following areas of the proposal do contractors seem the most reluctant to provide an adequate breakdown for?

	LABOR	MATERIAL	EQUIPMENT	FIELD OVERHEAD	HOME OFFICE OVERHEAD
EFDE	5	7	9	10	14
AROICC	10	6	14	14	21
RSCE	9	4	7	17	22
TOTAL	24	17	30	41	57

27. To your knowledge, has the auditor ever encountered problems with the contractor not cooperating in providing free access to contract books, records, etc.?

YES	61	NO	45
23-22-16		5-23-17	

A. If yes, what percentage of the time does this happen?

20%	40%	50%	60%	80%	100%
30	8	10	1	4	5
11-12-7	4-4-0	3-3-4	0-0-1	3-0-1	1-1-3

14. Which areas of a contractor's change order proposal do you find the most difficult to evaluate (please rank in order of most difficulty).

	LABOR	MATERIAL	EQUIPMENT	FIELD OVERHEAD	HOME OFFICE OVERHEAD
n	59	55	60	61	69
$\bar{x}$	2.71	4.09	2.95	2.62	1.96
s	1.44	1.09	1.20	1.18	1.37

15. What percentage of the time do you experience problems specifically with the overhead pricing section of a contractors change order proposal?

0%	20%	40%	50%	60%	80%	100%
11	25	8	19	14	9	16
3-6-2	6-7-12	3-3-2	7-8-4	5-4-5	2-3-4	3-9-4

A. If you did not say 0%, what do you believe are the major causes of this overhead evaluation problem?

CAUSES	RESPONDEES	GROUP
1. The difference between the government's and the contractor's definition of overhead and the question of allowability of certain items as overhead under ASPR.	22	(7-6-9)
2. Each contractor has developed a different cost accounting system.	14	(2-8-4)
3. Lack of sufficient back-up detail in the contractors overhead proposal.	14	(4-7-3)
4. Contractors attempting to maximize profits.	9	(5-3-1)
5. The inclusion of double costing in proposals.	6	(1-4-1)

16. Do you feel that some contractors require increased attention or special handling of their overhead proposals because of their extensive government contract experience?

YES 68 NO 31
18-32-18 8-8-15

If yes, what special procedures do you recommend?

PROCEDURES	RESPONDEES	GROUP
1. Periodic audits by the same auditor.	9	(1-7-1)
2. Realize the situation and give increased attention to the contractors overhead proposal.	8	(2-3-3)
3. Issue contractors firm guidelines on ASPR requirements on overhead.	6	(2-4-0)
4. Keep records on contractors prior overhead rates.	5	(0-2-3)
5. Closer ROICC-DCAA contact.	3	(1-0-2)
6. Identify specific areas and items for the auditor's investigation.	3	(3-0-0)
7. Develop standard overhead rates for each such contractor.	3	(1-1-1)
8. Others (two or less each)	12	(1-6-5)

G. INTERRELATIONSHIPS WITH DCAA

22. How familiar are you with the Defense Contract Audit Agency (DCAA) and its role in auditing the different types of government contracts?

VERY KNOWLEDGEABLE	KNOWLEDGEABLE IN MOST AREAS	GENERALLY KNOWLEDGEABLE	KNOWLEDGEABLE IN CONSTRUCTION ONLY	SOME KNOWLEDGE IN CONSTRUCTION
3	10	30	38	26
1-1-1	4-1-5	13-9-8	7-20-11	5-12-9

29. From your experience, how do you rate the contract auditors knowledge of the operations of construction contractors?

VERY KNOWLEDGEABLE	KNOWLEDGEABLE IN MOST AREAS	GENERALLY KNOWLEDGEABLE	KNOWLEDGEABLE IN SOME AREAS	KNOWLEDGEABLE IN FEW AREAS
1	21	21	24	31
0-0-1	6-5-10	5-10-6	7-13-4	9-11-11

24. Have you ever made contact with the DCAA auditor before his audit to discuss various aspects of the contractors proposal? YES 74 NO 37

YES		NO	
17-30-27	74	12-17-8	37

A. If yes, what percentage of the time do you do this?

20%	40%	50%	60%	80%	100%
22	9	14	3	3	18
8-4-10	4-3-2	1-7-6	1-0-2	1-2-0	1-10-7

B. If yes, please comment on how helpful this has been.

	COMMENT	RESPONDEES	GROUP
1.	Very helpful.	40	(9-16-15)
2.	Somewhat helpful.	10	(1-6-3)
3.	Marginally helpful.	8	(1-6-1)
4.	Depends on the auditor.	1	(0-1-0)

26. What percentage of the time do you maintain contact with the DCAA auditor during his audit?

0%	20%	40%	50%	60%	80%	100%
44	28	4	13	4	3	9
14-22-8	9-9-10	1-1-2	1-8-4	1-3-1	0-1-2	0-4-5

A. Do you feel this type of contact is, or would be helpful?

YES 86	NO 12	MAYBE 2
21-37-28	6-2-4	1-1-0

28. Do you believe that a contract administration/contract audit interface problem exists?

YES 57	NO 45
15-26-16	10-18-17

A. If yes, what do you conclude are the basic causes of this problem?

	CAUSES	RESPONDEES	GROUP
1.	The lack of communication between the auditor and contract administrators.	12	(4-4-4)
2.	The auditor's lack of construction knowledge.	9	(1-7-1)
3.	The auditor does not know the negotiator's needs.	8	(0-4-4)
4.	The auditors do not usually have a copy of the technical analysis.	2	(2-0-0)

B. If yes, do you believe this problem adversely effects the CCCO audit results?

YES 43	NO 14
12-19-12	0-9-5

C. If yes, in your opinion, how best can the interface problem be solved?

	SOLUTIONS	RESPONDEES	GROUP
1.	Increase channels of communication and liaison between the auditors and the contract administrator.	17	(10-6-1)
2.	Increase mutual education levels.	8	(4-3-1)
3.	Develop an EFD audit capability.	3	(0-3-0)
4.	Give the auditor specific instruction on items to review.	1	(0-1-0)

APPENDIX D

DEFENSE CONSTRUCTION CONTRACTING POLICY

Defense procurement can be divided into two major types: formally advertised and negotiated. Within the Department of Defense (DOD), negotiated procurement commands application of approximately 89.7% of procurement dollars.[8] This fact is due to the advent of sophisticated weapons systems research and development and their high costs. Construction contracts, on the other hand, are almost always advertised. The reason for this predominent use of formal advertisement is to receive a fair and reasonable price for construction while placing the elements of risk and reward squarely on the contractor's shoulders.

The preference for advertised procurement originates in the Congress of the United States. In addition to the concern of price or cost, both the issues of equal opportunity and avoiding favoritism are behind Congressional concern. The Comptroller General of the United States has further expressed Congressional views as "to restrict the uses of appropriations to the acquiring of actual Government needs; to secure such needs at the lowest costs; and to guard against injustice, favoritism, collusion, graft, etc., in

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[8] Beldin, David L., and Cammack, Ernest G., Procurement, p. 113, Industrial College of the Armed Forces, 1973.

the transacting of the public business."[9] Thus, when the four precedent conditions of sufficient time, sufficient number of competitors to permit free competition, sufficiently well defined specifications and drawings and unclassified subject matter exist, formal advertised procurement is required. Congress did realize, however, that the rigid process of formal advertising is not always possible nor in the best interest of the Government. Allowances were made for the use of procurement by negotiation under specific circumstances. These circumstances are prescribed in the Armed Services Procurement Regulation.

Because procurement for construction of facilities and related physical improvements almost always meet the four conditions required for advertisement, most defense construction contracts are both formally advertised and of a firm fixed price type. As such, the construction contractor agrees to furnish the construction specified in the contract documents at a set price which is not subject to cost review and subsequent adjustment. Contract modifications or change orders for the addition or deletion of work or time within the contract scope are a different matter. They are usually negotiated with the "on-site" contractor because of the inherent advantages he offers the Government. When these

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[9] General Accounting Office, Government Contract Principles, p. 37, 1970.

change orders exceed or are expected to exceed $100,000, they fall under provisions of Public Law 87-653, more commonly known as the "Truth in Negotiations Act" (TIN). Passed by Congress in 1962, TIN requires both prime contractors and subcontractors to submit appropriate cost and pricing data and to certify that such data is accurate, current and complete. This submission is required for any non-competitive negotiated procurement action expected to exeed $100,000. ASPR requires that the contract clauses include provisions for auditing all such proposals by the Government to determine the correctness of the data and, if the data is found to be defective, to reduce the contract price by the amount resulting from this defective data. Thus, in defense construction contracting, TIN is one example of how contract administrators may find themselves bound by a combination of both advertised and negotiated administrative procedure on the same contract.

The procedures for contract administration in DOD are contained in the *Armed Services Procurement Regulation*. It should be noted that the Armed Services Procurement Act of 1947 (ASPA) is the fundamental substantive authority for the conduct of all procurement in military departments, the Coast Guard and the National Aeronautics and Space Administration. Basic procurement policies, procedures and controls are then promulgated by the Secretary of Defense in the regulatory document, *Armed Services Procurement Regulation* (ASPR). Each Service then interprets ASPR for its contract administration personnel and issues its own detailed guidance.

APPENDIX E

PUBLIC LAW 87-653, THE TRUTH IN NEGOTIATIONS ACT

In the early 1960's, the then current ASPR already required a contracting officer to obtain submission and certification of cost and pricing data for negotiated procurement. Upon Congressional concern over the proper receipt and use of cost and pricing data, the General Accounting Office (GAO) was asked to investigate conformance with this requirement. Testifying before both the House and Senate Armed Services Committees, GAO furnished considerable evidence of non-conformance to Congress. This testimony centered on the two following specific points: defective data was being submitted to the Government in negotiated procurement, and there continued to be failures on the part of the Government to require submission and certification of cost and pricing data.[10] It became clear to Congress through various GAO audits that numerous unequal bargaining situations had developed where the Government's interests appeared to have been prejudiced. As a result of these findings, an impetus arose for Congress to pass Public Law 87-653, The Truth in Negotiations Act. This act was enacted on 10 September, 1962, becoming effective

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[10] Pettit, Walter F., "Truth In Negotiations - Part I," The Government Contractor: Briefing Papers, No. 68-3, p. 305, June 1968.

1 December of the same year. The purpose of the act was to specify the minimum requirements to be met in negotiated procurements, and this requirement was effected through the modification of the Armed Services Procurement Regulation.

Basically, the Truth in Negotiations Act requires both prime contractors and subcontractors to submit cost or pricing data and to certify that to the best of their knowledge and belief that such data was accurate, complete and current in the following situations:

> "1. Prior to the award of any negotiated prime contract under this title where the price is expected to exceed $100,000;
>
> 2. Prior to the pricing of any contract change or modification for which the price adjustment is expected to exceed $100,000, or such lesser amount as may be prescribed by the head of the agency;
>
> 3. Prior to the award of a subcontract at any tier, where the prime contractor and each higher tier subcontractor have been required to furnish such a certificate, if the price of such subcontract is expected to exceed $100,000; or
>
> 4. Prior to the pricing of any contract change or modification, to a subcontract covered by (3) above for which the price adjustment is expected to exceed $100,000 or such lesser amount as may be prescribed by the head of the agency."[11]

In addition, all contracts and subcontracts subject to the Act must contain a provision for adjustment in price, including profit or fee, where defective data is furnished. Also required is a provision setting forth the following exemptions where cost data need not be furnished: "where

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[11] Nash, Ralph C. Jr., Government Contract Changes, p. 464, Federal Publications Inc., 1975.

the price negotiated is based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the general public, prices set by law or regulation or, in exceptional cases, where the head of the agency determines that the requirements of this subsection may be waived and states in writing his reasons for such determination."[12]

In order to provide the Government with the full means to determine the accuracy, completeness and currency of contractor cost and pricing data submitted, Congress amended Public Law 87-653 through the enactment of Public Law 90-512 in 1968. Public Law 90-512 provides for free access to contractor records by authorized representatives of the government agency involved. Also included is the right to audit all books, records, documents and other data of the contractor or subcontractor related to the negotiation, pricing or performance of the contract, subcontract or contract modification during a period of three years from the time the final contract payment is received.

Since the existance of negotiated construction contracts is limited, the above statutes rarely apply to the basic construction contract itself. There are, however, a substantial number of contract modifications or change orders

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[12] Gold, Harold, "Determining Dollar Recovery," Government Construction Contracting, p. H-59, Federal Publications Inc., 1975.

exceeding the $100,000 threshold negotiated under advertised firm fixed price construction contracts to which P. L. 87-653 does apply. The contractor's proposals for these contract changes require the same three elements of submission, certification and inclusion of a downward adjustment clause for the cost or pricing data as do negotiated contracts. In addition, ASPR requires that an advisory audit be performed for all one source, contract modifications in excess of $100,000 before negotiations commence. This audit is performed by the Defense Contract Audit Agency in order to determine the reasonableness and authenticity of the contractor's submitted cost or pricing data. The contractors proposal must be submitted with a signed DD form 633 to include a breakdown of each proposed price element substantiated by attaching separate pages of cost or pricing data supporting the specific price element or stating where it may be found. Any subcontractor prices over $100,000 must also be forwarded with a signed DD Form 633 completed in the same detail including specific price element substantiation as in the prime contractors submission. The audited DD Form 633 with its substantiation backup then serves as the contractor's or subcontractor's proposal during change order negotiations.

APPENDIX F

NAVY CONSTRUCTION CONTRACT ADMINISTRATION ORGANIZATION

Article 1-401.53 of the Navy Procurement Directives assigns responsibility for the design, award, construction and contract administration of shore facilities in the Navy to the Commander of the Naval Facilities Engineering Command (NAVFAC), who then acts as "contracting officer" for all NAVFAC contracts. The Commander's authority in turn has been delegated to certain Civil Engineer Corps (CEC) officers within NAVFAC and its field offices, each known as an Officer in Charge of Construction (OICC). For contracts not involving construction such as architecture and engineering (A/E) contracts, he is known as an Officer in Charge (OIC). It should be pointed out that all persons other than the Commander who exercise NAVFAC contractual authority are doing so "For the Commander, Naval Facilities Engineering Command , Contracting Officer."[13]

In addition to facilities acquisition, NAVFAC also has the responsibility for the planning, programming and maintenance of all naval shore facilities and has established six Engineering Field Divisions (EFD's) to perform these functions and provide technical assistance to local naval

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[13] Naval School, Civil Engineer Corps Officers, CECOS 202/72, Rev. 2/74, An Introduction to NAVFAC Contracting, p.8, 1974.

activities on a regional basis. Presently, EFD's have been established at the following locations:

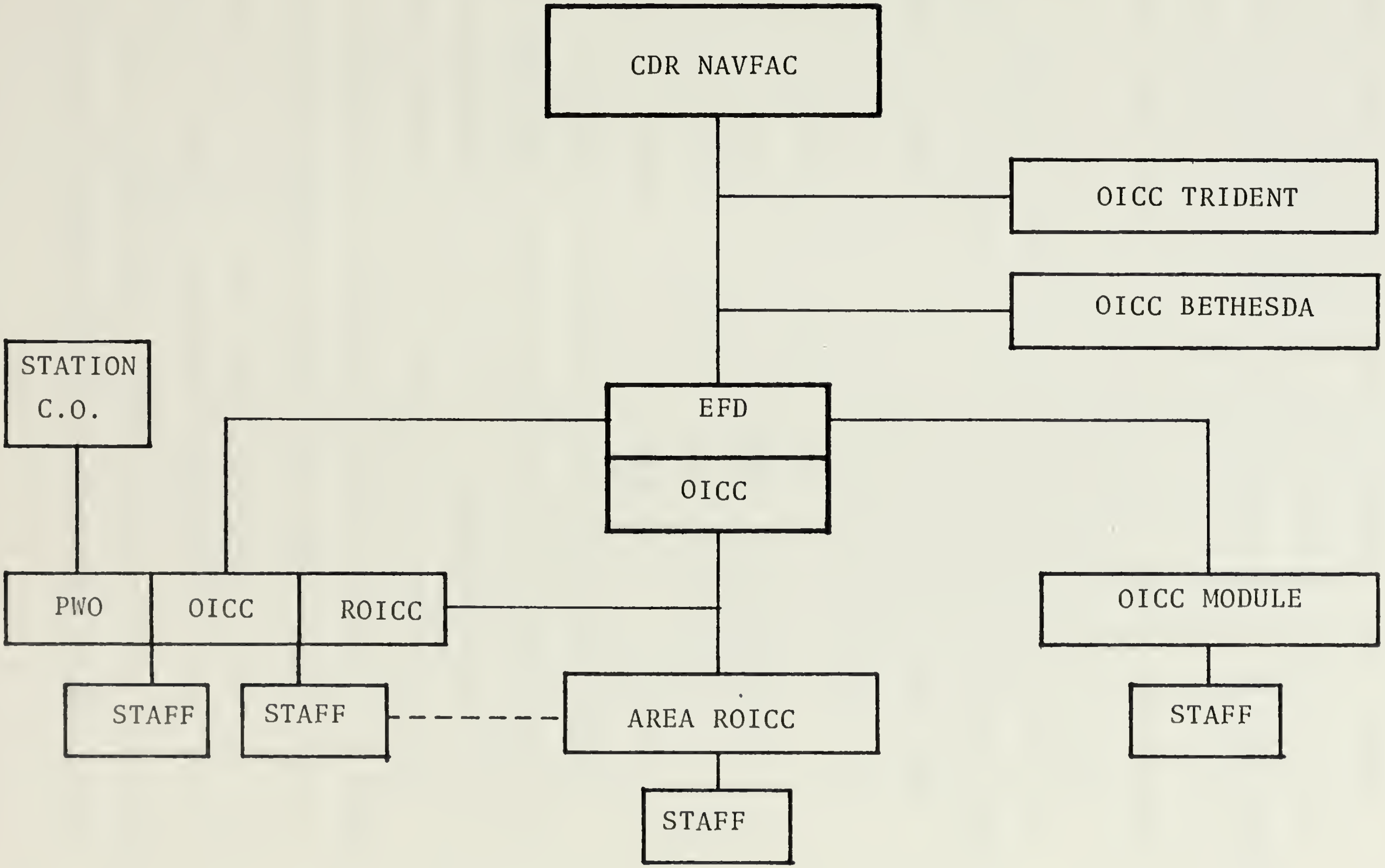
Atlantic Division, Norfolk Virginia
Chesapeake Division, Washington, D. C.
Northern Division, Philadelphia, Pennsylvania
Pacific Division, Honolulu, Hawaii
Southern Division, Charleston, South Carolina
Western Division, San Bruno, California

Commanding officers of these six EFD's are also designated as OICC's and OIC's, having authority to award and administer construction and other contracts. In addition to the six above listed EFD's, two OICC special modules have been established for the large construction efforts of the Trident Submarine Support Facility at Bremerton, Washington and the National Military Medical Center at Bethesda, Maryland. These two organizations have been established independently of the regional EFD's and report directly to the Commander, NAVFAC. The relationship of both the EFD's and OICC Trident and Bethesda to the Commander NAVFAC is shown on figure 1, page 125.

At the OICC/EFD level, administration of a contract requires performance of three general functions: planning the contract, awarding the contract and controlling contract performance. Within the EFD, these contract administration functions are consolidated in the Facilities Acquisition Department which is subdivided into three divisions, the Contracts Division, the Design Division and the

EXHIBIT 1

NAVFAC CONTRACT ORGANIZATION

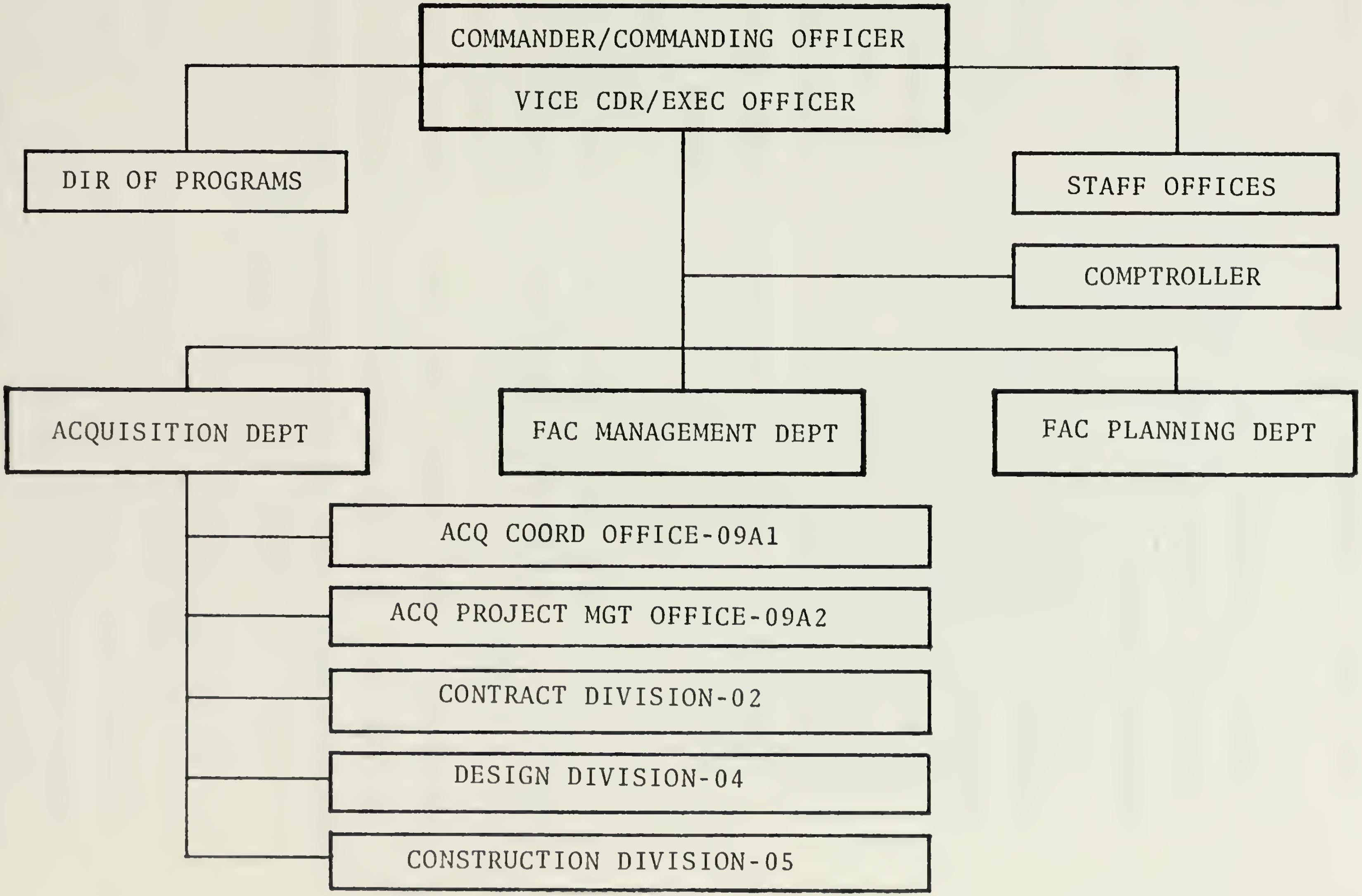


Construction Division as shown in figure 2, page 127. The Contracts Division is concerned with administrative procedures related to contract performance, the Design Division with preparation of plans, specifications, cost estimates and other matters of architectural and engineering preparation and review, while the Construction Division is concerned with matters relating to the actual construction effort in the field. Within the Construction Division itself, engineers with extensive background in both construction and government contract administration have been appointed to monitor the contracts of the various field offices which are known as ROICC (Resident Officer in Charge of Construction) offices.

After a contract has been planned and awarded by the OICC/EFD, the control function is usually performed in the field by the Resident Officer in Charge of Construction (ROICC). The ROICC is usually a Civil Engineer Corps officer with prior contract administration experience who has been designated by the OICC as being responsible for the administration of both construction and other type NAVFAC contracts at a designated naval activity. In areas of significant contract workoad, the ROICC position will be occupied on a full time basis, whereas in areas of less significant workload, the ROICC responsibility may be delegated to the activity Public Works Officer as an additional duty. The Public Works Officer who is a department level

EXHIBIT 2

ENGINEERING FIELD DIVISION ORGANIZATION



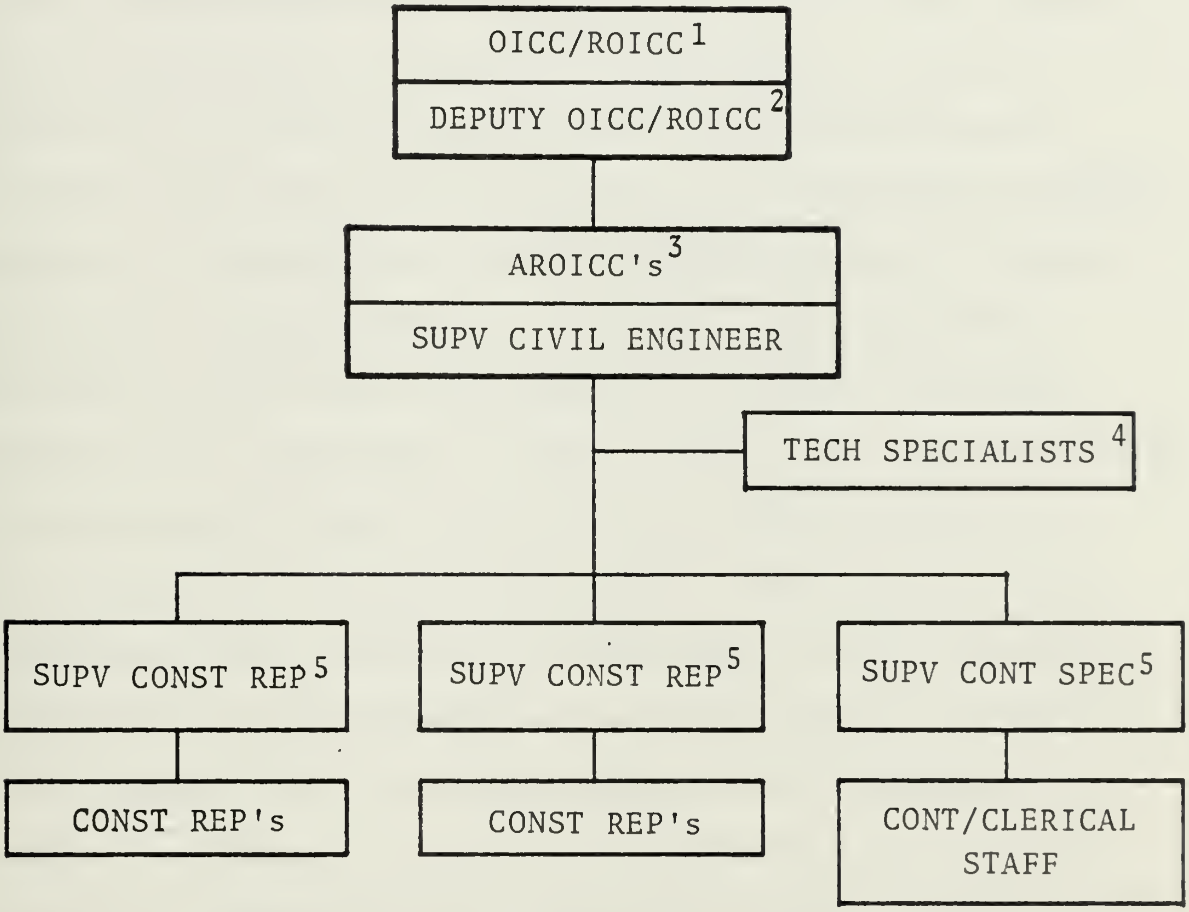
administrator at most naval activities may also have been delegated limited OICC authority for smaller sized local contracts.

The ROICC/OICC in either case is assisted by a staff of both military and civilian personnel in the administration and inspection of the construction contracts assigned to his office. Supervision of the day to day contract administration is then delegated to an Assistant Resident Officer in Charge of Construction (AROICC) who is assisted by the technical advise of a supervisory civil engineer and his staff of engineers, contract specialists and an inspection staff. Responsibilities assigned to AROICC's vary to some degree depending on location and staffing. In general, either the AROICC who is a military officer or the Supervisory Civil Engineer who is a civil service classified civilian, is the senior first level contact with the construction contractor in the field. The number and rank or grade level of both positions depends upon the dollar-value of the construction work-in-place, the diversity of construction contracts, and the number of construction sites and the distances between sites. The typical organization of a ROICC office may appear as indicated in figure 3, page 129.

Of the contract administration duties performed in the ROICC office, a significant portion of the time available to the ROICC, AROICC or Supervisory Civil Engineer is spent in the processing of contract modifications, or change orders

EXHIBIT 3

OICC/ROICC FIELD OFFICE ORGANIZATION CHART



1. May be assigned on an additional duty (ADDU) basis.

2. May be established where workload or ADDU ROICC duties dictate.

3. Military and/or civilian. Senior AROICC to be designated AOICC.

4. May be an estimator or engineering specialists (electrical, mechanical, etc.).

5. May be established only when Supervisory Civil Engineer's span of control becomes unmanageable and incumbent supervises four or more positions.

as they are known. Change orders evolve out of the need to modify the agreed upon provisions of the original basic contract between the contractor and the Government. This need in construction contracts may result from the requirement to accomplish or eliminate specific work items, to adjust for conditions which differ from those shown in contract plans and specifications, or to acknowledge excusable delays by extending the contract completion date. Whatever the reason, change orders are almost always negotiated because of the several advantages the on-site contractor offers to the Government. These change orders are authorized by the changes clause to the contract general provisions, or "boilerplate" as they are known.[14] This clause is the most significant feature of a government contract that distinguishes it from conventional private industry contracts. In accordance with the changes clause, the Government is entitled to change the contract unilaterally and hold the contractor responsible for performance of the changed work. Accordingly, the contractor is entitled to equitable compensation, if appropriate, and its amount is to be agreed upon by the two parties. If agreement on compensation cannot be reached, the Dispute clause in the contract provides administrative relief to the contractor. The purpose of the

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[14] General Services Administration, Standard Form 23-A (Rev. 4-75), General Provisions (Construction Contract), p. 1, 1975.

changes clause in this respect is to allow the Government to satisfy its needs as expeditiously as possible.

Once the requirement for a change has been validated in accordance with administrative requirements, the ROICC office generally follows the following set of basic procedures. First, an independent government estimate is obtained by the ROICC, prepared by his staff or with technical assistance of the OICC/EFD. Second, funds are reserved to cover the estimated cost of the change. Third, a change order request (COR) package containing the plans and specifications of the change is sent to the contractor requesting a detailed cost and price proposal breakdown, usually requested in the same format as the government estimate. Fourth, the contractor's submitted proposal is compared with the government estimate and fifth, negotiations are scheduled and concluded. Since the COR does not represent the authority to proceed, the contractor may not commence execution of the change order, except at his own risk, until the negotiations have been concluded and the formal change order documentation has been reviewed and approved by the OICC with a formal change order being issued. In cases of unacceptable delay, the ROICC may issue a Notice to Proceed (NTP) to preclude the incurrance of additional costs to the Government. Even with issuance of an NTP, the contractor can not normally be paid until the formal change order has been issued by the Government and accepted by the contractor. If the contractor is given an NTP, negotiation of the final

price should be finalized before the changed work is approximately 30% complete to prevent the change from developing into a cost plus percentage of cost (CPPC) transaction. CPPC procurement is forbidded by ASPR while the negotiation of final price before performance is prescribed to take full advantage of the benefits this type of procurement offers (i.e., fixed price with maximum risk for loss and profit opportunity placed on the contractor).

For change orders expected to exceed a $100,000 threshold, the following two modifications to the above procedures are required by TIN. First, the ROICC must request that the contractor submit and sign a DD Form 633 certifying the cost and pricing data are current, correct and accurate along with his change order proposal and second, the ROICC must make provisions to have the contractors proposal including the DD 633 audited by DCAA before negotiations may begin. Within the ROICC office, responsibility for coordinating the obtainment of the audit is usually delegated to the AROICC, or to the Supervisory Civil Engineer in some cases.

APPENDIX G

THE DEFENSE CONTRACT AUDIT AGENCY

With the requirement to obtain and audit cost and price data included in negotiated procurement as required by passage of the Truth in Negotiations Act in 1962, each of the three services turned to audit-support components within their own organizations. The Navy had established and maintained an Auditor General's organization with separate contract and internal audit departments. The Army Audit Agency, which initially established separate contract and internal audit functions, had later merged these two areas. The Air Force had also developed a contract audit function under an Auditor General but left many of the audit functions to be assumed by procurement and contract management activities. So, in dealing with contracts awarded by different services, contractors were subject to varying audit procedures, as well as organizational differences. As part of the centralization of common functions movement that was enveloping the Department of Defense in the early 1960's, the three audit service agencies were combined into one central organization.

The Defense Contract Audit Agency (DCAA) was established by DOD Directive No. 5105.36 dated 9 June 1965. The Director of DCAA reports directly to the Secretary of Defense with primary staff supervision being provided to DCAA by the

Assistant Secretary of Defense (Comptroller) acting on behalf of the Secretary. The Secretary of Defense, then, through his assistant (Comptroller), prescribes the principles and policies to be followed in connection with both technical organization and administrative matters related to contract audits.

The implementing instruction also fully established the primacy of DCAA in the contract auditing area by stating that "No separate contract audit organization independent of the Defense Contract Audit Agency shall be established in the Department of Defense."[15] The instruction further states that DCAA shall be responsible for "performing all necessary contract audits for the Department of Defense and providing accounting and financial advisory services regarding contracts and subcontracts to all Department of Defense components responsible for procurement and contract administration. These services will be provided in connection with negotiations, administration, and settlement of contracts and subcontracts."[16] DCAA's basic mission may further be described as:

1. Audit, examine and/or review contractor's and subcontractor's accounts, records, documents and other evidence.

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[15] Department of Defense Directive, number 5105.36, Defense Contract Audit Agency, p. 1, June 9, 1965.

[16] *Ibid.*, p. 3.

2. Examine reimbursement vouchers.

3. Provide advice and recommendations to procurement and contract administration personnel on:

    a. Acceptability of costs incurred

    b. Acceptability of estimates of costs

    c. Adequacy of contractor's accounting and financial management systems

    d. Assist in surveys of contractor purchasing systems

    e. Establish and maintain liaison auditors at major contract administration offices

    f. Review GAO reports

    g. Attend contract negotiation and other contract cost matter meetings, in an advisory capacity.[17]

The headquarters of DCAA is located in Cameron Station, Virginia with seven regional offices located in Boston, New York, Philadelphia, Atlanta, Chicago, San Francisco and Los Angeles. The regional offices are then sub-divided into branch offices, resident offices and liaison offices. Branch offices are located in areas of concentration of smaller contractors which are audited on an "as-needed" basis. Resident offices are located at the plants of larger contractors, and liaison offices are located in the procurement and administration installation of the services and the Defense Logistics Agency (DLA - formally DSA). DLA is responsible for procurement of common

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[17] Procurement Associates Inc., Government Contract Audits, p. 1-5, 1975.

commercial-type items for all the services. These offices total approximately 400, with the majority being located at contractor plants. DCAA employs approximately 3,800 employees, of which 3,100 are auditors. The auditors examine an average of 21,500 pricing proposals a year totalling over $50 billion and audit incurred costs of approxiately $24 billion a year.[18] From these figures it can be seen that the mission and functions support of DCAA are an integral part of the process of negotiating contracts and major contract modifications.

Because of the rarity of negotiated contracts in the ordinary defense construction program, DCAA primarily becomes involved with construction contract modifications exceeding $100,000. It is well to note, however, that although modifications exceeding $100,000 may not be rare, they are somewhat limited in their occurance. For this reason, the average DCAA auditor frequently has not had experience with auditing the records of a construction company, and in the majority of instances, has probably not audited the same construction company before. In addition to the limited occurance rate, the procedures of assigning requests for these audits to auditors is also a major factor in this regard. TIN Contract modifications are usually forwarded to

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[18] Ibid., p. III-1.

the DCAA branch office nearest the contractors home office location. Within the branch office, the audit request is then assigned based on workload to an individual who is part of an audit team of three or four auditors who are assigned the audits of a specified set of smaller companies. This same audit team would receive a second audit request concerning the same construction company. However, based on workload, the same auditor may or may not be assigned this second audit. Hopefully, the audit team supervisor would provide continuity in this regard. However, turnover of audit supervisors and team members must also be considered. In a great many instances, construction contract administration personnel may find themselves in the position of interfacing with a contract auditor with little or no experience or knowledge of construction contractors or construction operations. In return, the contract auditor may find himself in contact with a construction contract administrator with little or limited knowledge of accounting or auditors. This lack of mutual background leads to a communications problem that hinders the efficiency and effectiveness of the contract administrators in evaluating and negotiating the contractor's proposal.

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